The Social Contract

Vol. XII, No. 1 Fall 2001

Highlights

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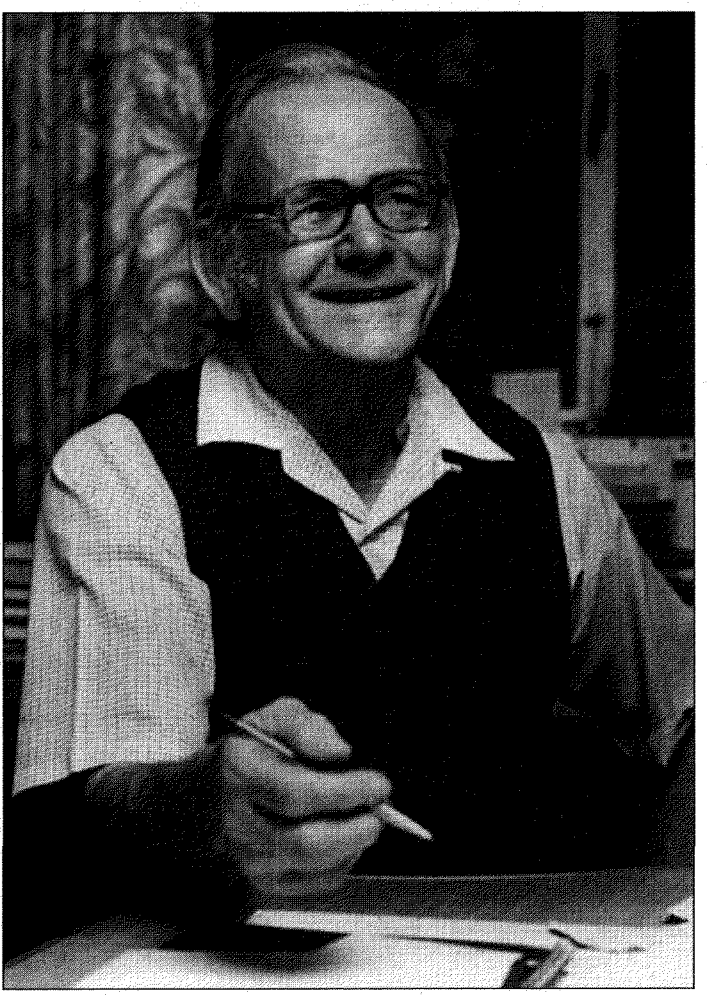
- Michael W. Masters
- Georgie Anne Geyer
- Walter Youngquist
- John Rohe

A Basic Hardin Reader:
- "Protection, Yes. But Against Whom? For Whom?"
- "There Is No Global Population Problem"
- "The Tragedy of the Commons"
- "Living On a Lifeboat"
- "Carrying Capacity As An Ethical Concept"
- "What Heretics Are For"

Comments in the aftermath of 9/11:
- Diana Hull
- Lindsey Grant
- Mark Krikorian
- Steven Camarota
- Don Collins

Book review by Joe Guzzardi

Garrett Hardin: An Introduction and Appreciation



David Simcox puts the case anew for a national identifier. See page 59.

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About THE SOCIAL CONTRACT

The English philosopher John Locke, whose thinking helped inspire the American revolution, said that society should be governed by an understood set of values he termed "the social contract." Under the social contract, governments have obligations to their citizens, and citizens have responsibilities to society.

Most public issues are basically moral and ethical ones. What is the right thing to do? How do we decide what we think is right? When "rights" collide, which ones take precedence? The concept of the social contract helps us sort out the difficult issues confronting American society today and helps us find balance.

Each quarter THE SOCIAL CONTRACT journal examines trends, events, and ideas that have an impact on America's delicate social fabric. Key topics addressed by this journal:

- *Human population issues, including absolute size, rate of growth, and distribution. Do cherished American ideals prosper or suffer through further population growth?*
- *Immigration issues. In order to best facilitate meeting the highest goals of the American people, (1) how many immigrants should we admit? (2) who should be admitted? and (3) how can we humanely enforce the rules?*
- *Language, assimilation, culture, and national unity considerations. What are shared values necessary to the maintenance of our social contract?*
- *The balance of individual rights and civic responsibilities. Since the previous issues are so often framed in terms of rights, what are the balancing obligations?*
- *Other nations' efforts at creating and guarding their own social contracts. What practical insight can be gained from observing the failures and successes in nation-building by other societies?*

THE SOCIAL CONTRACT explores these complex and interrelated issues with articles, essays and book reviews that vary greatly in outlook and philosophy. We encourage a wide spectrum of opinion as we publish contributions from many vantage points. The opinions expressed by the writers are not necessarily those of the editors or publisher.

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A Note from the Editor

Garrett Hardin: An Introduction and Appreciation

Garrett Hardin, recognized by *Science* magazine as "one of the intellectual leaders of our time," has influenced many of the people involved in our mutual concerns. One of the benefits of placing *The Social Contract* on the internet is that we are reaching new readers among high school and college students doing research on immigration, population, resource conservation, and problems with multiculturalism. For them, Professor Hardin is often a new name.

We have been looking forward to releasing this special issue of *The Social Contract*, which includes five seminal essays by Garrett Hardin. Applying basic biological knowledge to the practical problems faced by humankind, Professor Hardin raises ethical questions, and offers answers from a perspective that challenges orthodox assumptions.

Long-time devotees of Garrett Hardin will enjoy refreshing their acquaintance with these essays. We hope that newcomers will want to read more of his work.

* * *

As we were preparing this issue, the attacks on the World Trade Center and the Pentagon took place. While future issues of this journal will discuss immigration-related aspects of this crisis, we are pleased to include here a new study by David Simcox on the challenge of identifying and tracking aliens roaming in America. The 1996 Immigration Reform and Responsibility Act included Section 110, dealing with "entry-exit control." Special business and political interests successfully resisted implementing this provision and up to now Congress has appropriated no funds to enforce Section 110. We are now dealing with some of the consequences of this neglect.

There are further comments on aspects of the tragedy by Diana Hull, Lindsey Grant, Mark Krikorian, Steve Camarota, and Don Collins.

We look forward to your comments and suggestions for future topics.

WAYNE LUTTON, PH.D., Editor

Correction

In the article by B. Meredith Burke, "America Bursting at the Seams," (*The Social Contract*, Vol. XI, Number 4, Summer 2001, page 262), the paragraph at the bottom of the third column should begin: "Humankind as a whole consumes thirty percent more than the world regenerates each year as renewable resources, thus eating into the stock of unrenewable resources; hence the loss of habitat and species."

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Letters to the Editor

EDITOR:

I write in support of your preparation [for this issue] of "The Best of Garrett Hardin." I have admired him for virtually all of my career as a scientist. I have admired him as a person, a citizen, geneticist, philosopher, analyst, expert on population, social scientist, political commentator, ecologist, friend, and scholar. And I am not alone. Garrett Hardin has framed the arguments on environment and government, human rights and ethics, for three generations. We have unabashedly stolen those concepts and attitudes, even phrases and analyses, and used them freely in attempting to correct an errant world.

GEORGE M. WOODWELL, DIRECTOR
The Woods Hole Research Center
Woods Hole, Massachusetts

EDITOR:

I am puzzled by Dr. Samuel Huntington's belief (*The Social Contract,* vol. XI, no. 4, Summer 2001, p.263, "Migration Flows Are the Central Issue of Our Time") that Japan and those West European countries with declining populations face a dilemma: In order to maintain cultural integrity, they must limit immigration yet (as he sees it), they can't because of "economic necessity."

Perhaps he is addressing himself primarily to possible transitional problems of economic adjustment. In a country with a diminishing population, aggregate consumer demand declines along with the workforce, the reverse being true of a country with an expanding population.

But bearing in mind that in ordinary economic circumstances markets are continually having to adjust to quite rapid changes in the pattern of consumer demand, in resource availabilities, and in technologies, gradual changes in population size are unlikely to cause any serious dislocation.

More important, a reduction in the population of a developed country is hardly to be deplored on economic grounds. Certainly countries with populations as small as those in Switzerland, Norway, or Singapore are among those with the highest living standards in the world.

Indeed, as indicated in my brief article (Summer 2001, p. 256), specific advantages of a reduction in population size include an increase in land and resources per capita, and a decrease in the amount of pollution, garbage, and traffic congestion. Moreover, with the associated decline in the volume of imports relative to exports, an improvement in the terms of trade which entails a reduction in the prices of imported goods and material is experienced.

In sum, a developed country that is enjoying a declining population is twice blessed if it is able to prevent immigration. For along with an improvement in living standards and amenity it also avoids racial tensions and cultural conflict.

EZRA J. MISHAN
Professor of Economics, Retired
London School of Economics

EDITOR:

I read with great interest Diana Hull's article in *The Social Contract* (vol. XI, no. 4, Summer 2001, p. 279, "George W. Bush Proposes an Amnesty"). Her last paragraph on modernizing "the way we get fruit off a tree and produce out of the ground" reminded me of something very disturbing I read a while ago. In a very interesting book, *Poverty and Prosperity: Immigration and the Changing Face of Rural California*, two University of California/Davis professors write: "Critics of guest worker programs and of the immigrant-intensification of agriculture argue that labor-saving technologies and management practices exist, but that in an environment of abundant immigration labor, farmers have little incentive to use them. *Legal challenges have brought publicly supported farm mechanization research to a standstill, and agricultural engineering departments in universities around the country are downsizing or closing* (p. 2, italics mine). I couldn't believe this when I read it and I still can't. The very heart of democratic capitalism is letting us continually work to find a better way, and we will all be better off. This is Luddism with a vengeance. In other words, mechanizing farm work will put hordes of immigrants out of work, so let's outlaw progress. I don't believe it.

People like you are doing very good work, but I despair sometimes that our poor country is lost to forces we can't control.

WILLIAM NADEAU
San Diego, California

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EDITOR:

I strongly support Oracle CEO Larry Ellison's suggestion to require high-tech national ID cards — with this twist: *Only* foreign nationals in the U.S. — including those holding dual citizenship — be issued such cards, to be in their possession at all times.

President Bush could issue an executive order today mandating that all foreign nationals currently in the U.S. immediately report to designated government offices to undergo high-tech identification techniques such as iridology, DNA testing, facial mapping, etc., or be subject to immediate imprisonment, deportation and stiff fines.

The INS, DOD, DOJ, and FBI freely admit that our federal government has lost control of who is in the U.S. An ID card for foreign nationals who choose to be on U.S. soil during the national emergency would serve to protect our citizens from internal foreign enemies. And the rights of American citizens would be preserved.

TERRY GRAHAM
Boulder, Colorado

EDITOR:

We need immediate major reforms. You should be taking advantage of the 9/11 tragedy by highlighting the illegal status of the terrorists on your web page. In fact, the whole effort of the immigration reform movement ought to be to leverage its efforts onto the big wave of anti/illegal/alien sentiment that is now occurring throughout our nation. Illegal alien terrorists can get drivers' licenses, credit cards, and pilot licenses now! The public won't put up with this, but you have to broadcast these issues that are not getting much media [attention].

Reliable sources have indicated that nearly all of the terrorists involved in the September 11 attacks were illegal aliens. They shouldn't have even been here. Our open border policies are a joke. They desperately need reform. This 9/11 tragedy should be a wake-up call to all Americans.

Currently anyone entering the country on any type of visa — business, tourist, or student — can easily overstay their visa time. There is no enforcement mechanism of any kind. Moreover, persons entering the country illegally can also stay in this country with impunity. They can easily get government supplied housing, food, medical, and educational benefits at an equivalent — and in some cases higher — level than an American citizen. Eventually these illegal visitors can convert their expired visas to a permanent resident card, known as a green card.

In other nations, including Japan, a person overstaying their visa would be tracked down, caught, and deported. The Immigration Authority would disseminate the database of "overstays" to every government agency. Federal, state, and local agencies working together would each have the name of the person with the expired visa in their database for possible referral to the local police.

Here in the U.S. the INS doesn't have a database that will track these scofflaws, much less share the names with local government agencies. Moreover, in San Francisco, we have a "Non-cooperation Agreement" as it applies to immigration matters. Here, in wacky San Francisco, we like to pretend that we're not part of the United States.

It used to be, during my parents' generation, that those wishing to immigrate here would have to show evidence of a clean criminal record from their native country as well as a clean bill of health. Furthermore, there was always an American sponsor who assured that this new immigrant would not be a burden to society. Now, all these safeguards are gone. We should revert back to common sense and reinstate these safeguards. For starters, we should be cooperating with federal immigration authorities by disseminating the "overstay" database to all state and local authorities, i.e., motor vehicle agencies.

Perhaps businesses like credit card companies should also have access to the database.

ADAM SPARKS
San Francisco, California

http://www.census.gov/cgi-bin/popclock

The figure changes constantly. On October 15 at 11:58 a.m. the resident population of the United States was projected to be 285,358,855. This was based on:

One birth every	8 seconds
One death every	14 seconds
One international migrant (net) every	37 seconds
One federal U.S. citizen (net) returning every	4,381 seconds
Net gain of one person every	11 seconds

Source: U.S. Census Bureau
Population Division, maintained by Laura K. Yax

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Ecology, Ethics, and Immigration

The writings of biologist Garrett Hardin

by Michael W. Masters

> *Noble intentions are a poor excuse for stupid action. Man is the only species that calls some suicidal actions "noble." The rest of creation knows better.*
>
> — Garrett Hardin

Will Rogers once said, "It ain't what you don't know that gets you into trouble, it's what you know that ain't so." The prairie philosopher's pithy but prescient aphorism succinctly captures the modern mass hypnosis known as liberalism — which might be described as the collection of all feel-good social, moral, and political sermonizing that just "ain't so." The litany is all too familiar: "From each according to his ability to each according to his need," "Our diversity is our strength," and that great classic, "All men are created equal," (with apologies to Thomas Jefferson, who really meant that all *Englishmen* deserved equal treatment under English law.)

Few contemporary issues arouse greater liberal ire than opposition to immigration. The first line of defense of liberals' open border policy is an ever-ready appeal to American sentimentality — the poor, the starved, the "huddled masses" must be housed, clothed, and fed — all at taxpayer expense. If this fails, the left unlimbers its rhetorical weapon-of-mass-destruction. Since immigration is almost exclusively a Third World affair, doubters are assailed with dark accusations that opposition to immigration is racism — a curious word whose etymological history begins with its utterance by the Bolsheviks in the early 1930s.

It's all very Orwellian, and most men dare not contradict this oppressive Zeitgeist in public, no matter how mild or well-grounded in science and reason are the arguments. Lost in the witch-hunt hysteria of this high stakes *kulturekampf* — in which immigration is merely one of many battlefields — is thoughtful consideration of the long-term consequences of playing politics with the future of peoples, nations, natural resources, and the earth's ecosystem. Even groups such as the Sierra Club, whose very purpose for existence is protecting the environment, cower in silent neutrality on the immigration issue.

Intellectual Foundations

However, not everyone is intimidated into silence by emotional rhetoric substituting for rational dialogue. One of the most persistent and eloquent advocates for a sound ecological view of population and immigration issues is Garrett Hardin, professor emeritus of biology at UC Santa Barbara. Professor Hardin is the author of numerous books and essays on ecology, population, immigration, and even ethics — especially ethics. His writings have played a major role in creating a scientific, intellectual, and political foundation for a sustainable population policy.

His seminal essay, "The Tragedy of the Commons," first published in 1968, served as inspiration for a generation of ecologists, ethicists, and immigration control advocates — including well known figures such as former Colorado governor Richard Lamm and THE SOCIAL CONTRACT's own John H. Tanton. Other essays include "Living on a Lifeboat," "Carrying Capacity As an Ethical Concept," and "Discriminating Altruisms." His books include *The Limits of Altruism, An Ecologist's View of Survival; Living Within Limits; The Immigration Dilemma, Avoiding the Tragedy of the Commons*; and *Exploring New Ethics for Survival.* Another release, *Stalking the Wild Taboo,* includes several essays

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Michael W. Masters *writes on issues of politics, history, moral philosophy, and sociobiology. He is a frequent contributor to* The Social Contract.

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illuminating the destructive impact of universalism on our society.

Hardin's works elaborate recurring themes suggesting that dire consequences may be in the offing as a result of our immigration policies. First, all ecosystems — from the common grazing lands shared by our herdsman ancestors to the oceans that girdle the globe and the minerals that lie beneath our feet, to the homelands of nation states as they have endured for many centuries — are finite. The numbers of living things, as well as the quality of life supportable by any ecosystem, is limited by its carrying capacity.

Second, populations that are not constrained by adversity, foresight or accountability will, in serving their own self-interest, inevitably exceed the carrying capacity of their ecosystem. Exceeding this limit may produce severe and possibly permanent damage to ecosystems and the populations that depend on them. This is the essence of the "tragedy of the commons."

Third, the uniquely Western urge to solve all problems with outpourings of compassion — which quickly escalate to torrents of money, food, medicine, "advisors," and peacekeepers — often produces outcomes not at all in keeping with the kind-hearted spirit that prompted such effusions. Professor Hardin calls this the Law of Unintended Consequences.

There is a dark side to these acts of conscience. Recipients become dependent on handouts, removing incentive for self-betterment. Worse yet, philanthropy must have its managers and bankers. Not only do the poor and disadvantaged benefit from charity but so do those through whose hands flow donors' cash. Finally, when charity takes the form of high levels of immigration its byproduct is to supply the rich and powerful with cheap labor. Underneath the Orwellian compassion doublespeak lies old-fashioned greed.

Ethical Ecology

Contrary to liberal rhetoric, a sound, indeed compelling, argument can be made that ethical considerations *demand* limits on immigration. Since all environments are finite, overpopulation must inevitably lead to nasty consequences— overcrowding, high crime, social unrest, high taxation, resource depletion, environment degradation, and more. This makes population a problem of ethics as well as ecology, themes Professor Hardin first explored in "The Tragedy of the Commons."

The idea behind the "tragedy of the commons" was first advanced in 1833 by mathematician William Forster Lloyd. Its thesis begins with a pasture, held in common by a band of herdsmen. All are free to use the commons to graze their animals. Use of the pasture costs each herdsman nothing, but his livestock are valuable. Therefore each herdsman, acting out of self-interest, will be tempted to exploit the commons by grazing more livestock on the land. But the commons can only support so many animals. This limit is called the carrying capacity.

Exceeding the pasture's carrying capacity leads to depleted grass stocks, soil erosion, malnourished animals — and, quite possibly, conflict among herdsmen. Unchecked, this process will lead to exhaustion of the commons. When this happens, everyone suffers, even those who — out of a sense of responsibility or conscience — refrain from overusing the commons. The inevitability of this outcome is the "tragedy" of the essay's title.

Fortunately, restraint is possible even in the presence of human greed. If the pasture has an owner, he has a vested interest in preserving it for the future. If he fails to limit use to the pasture's natural carrying capacity it will be ruined, and he will suffer great loss. The tragedy of the commons is a persuasive argument for private property ownership. In a crowded world, privatism may help provide a stable social and economic life. This theme will be further explored later.

The Conscience Dilemma

While private property ownership may mitigate the tragedy of the commons, conscience will not. Since conscience is one of the most compelling demands of both secular humanism and Christian dogma, this will strike many as heretical. However, Professor Hardin summons forth the rather startling conclusion that under certain circumstances, conscience may eliminate itself from a population:

> *People vary. Confronted with appeals to limited breeding, some people will undoubtedly respond to the plea more than others. Those who have more children will produce a larger fraction of the next generation than those with more susceptible consciences...The argument here has been stated in the context of the*

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population problem, but it applies equally well to any instance in which society appeals to an individual exploiting a commons to restrain himself for the general good — by means of his conscience. To make such an appeal is to set up a selective system that works toward the elimination of conscience from the race...

If even one person in the community follows a lower standard [of conscience] that person prospers at the expense of the others. A laissez faire market system ruled by conscience alone rewards for a lack of conscience... The second stage in the dissolution of a conscience-ruled system takes place because of envy. As the 'good guys' see the 'bad guys' prosper, their envy is energized and one after another good guys become bad guys.

One may well ask, if conscience is bound to eliminate itself, why does it exist today? After all, the human race has been around for a long time. We will return to that question later.

The Compassion Trap

The political left has been highly effective in funneling debate over immigration into the compassion *cul-de-sac,* sidestepping entirely the long-term issues raised in "The Tragedy of the Commons." Perhaps Professor Hardin's greatest gift is his ability to articulate the consequences of short-sighted policies based on emotionalism. No better example of this talent exists than Professor Hardin's 1993 letter to his granddaughter, Dinah.

The young lady had taken her grandfather to task for his opposition to high levels of immigration that threaten to overwhelm America during Dinah's lifetime. Professor Hardin's response was reprinted as an essay in the 1995 collection, *The Immigration Dilemma, Avoiding the Tragedy of the Commons.* The letter's central themes form the core strategic rationale of several immigration control organizations, among them Numbers USA, the Carrying Capacity Network, Zero Population Growth, and the highly effective traveling immigration billboard campaign that helped unseat Republican immigrationist Spencer Abraham.

Professor Hardin's admonition to his granddaughter is that neither Christianity nor any other *survivable* moral code compels us to accept every downtrodden stranger in the world, Emma Lazarus' poem on the Statue of Liberty notwithstanding ("Bring me your tired, your poor, your huddled masses, yearning to breathe free, the wretched refuse of your teeming shore..."). We should be our brother's keeper (familial), but we can never be our brothers' keeper (all of mankind). The world's excess population is simply beyond our means to accommodate.

Noble Deceptions

Professor Hardin points out that not everyone who claims to speak from noble principles is in fact doing so. Immigrationist rhetoric is often motived by self-serving goals — among them cheap labor and political power. The Lazarus poem morphed a French gift celebrating America's struggle for independence into a welcome mat for the entire world. And, it also served to defuse opposition to large-scale importation of low wage workers. Hardin exposes the unseen hand guiding affixation of the poem to Lady Liberty:

As a matter of historical fact, the poem is not a part of the statue. It was added to the island 17 years after the statue was dedicated. And who added it? Congress? No, some of Lazarus' wealthy friends put it there. Congress wasn't consulted. Neither were the homeless and the unemployed. Nor Americans working on the lowest rungs of the economic ladder, where they can easily lose their jobs to new immigrants. The wealthy don't suffer from such 'generosity.' In fact, they often gain by being able to hire cheaper servants.

Similarly, Professor Hardin examines Jimmy Carter's Mariel boatlift fiasco of 1980, a disaster that contributed to Carter's unseating by Ronald Reagan. Hardin concedes that Carter may have been motivated by humanitarian beliefs. But, he points out, no matter the motive, the 120,000 Cubans who made it across the 90 miles separating Cuba from Florida amounted to the Cuban population increase *for a single year* [emphasis added]. Carter soon backpedaled from this folly due to public pressure as well as belated recognition of the fact that "Cuba could easily send us that amount every year — forever."

Numbers Matter

Putting the situation in personal terms, Professor Hardin points out that in order to solve this problem

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on a world-wide scale — assuming the world's poor number two billion — every family in America, Dinah's included, would have to immediately accept 32 strangers into their home. In turn, those strangers would add another newborn child each year thereafter — in perpetuity.

Roy Beck of Numbers USA uses this metaphor with telling effect. Mr. Beck travels about the country with a jumbo fishbowl full of gumballs representing the world's six billion occupants. He removes a few, a symbol of the world's annual increase of almost 100 million. He then asks the rhetorical question, can taking in that annual surplus, an amount equal to one third of the U.S. population, make a difference to the rest of the world? Clearly not. And yet America would be devastated.

Returning to the numbers consideration, Professor Hardin raises the issue of sentimentality versus rational thought as an ethical issue — and one for which the ethical answer is the opposite of that claimed by sentimentalists:

> *I approach immigration problems from the scientific side. As modern science emerged in the seventeenth century, Galileo said 'the grand book of the universe is written in the language of mathematics'... Time after time, a difficult question that does not obviously involve mathematics yields its secret once mathematical reasoning is introduced. Such successes lead some of us — I'm one — to believe that the discipline of ethics can also benefit from mathematical insights. We must pay attention to quantities...As far as ethics is concerned, perhaps the difference between one brother and two would not be enough to bother about. But suppose there are a million brothers. Ten million. In all realism, must I be "my brothers' keeper" when there are hundreds of millions of brothers out there crying to be cared for?*

Ideas Have Consequences

In his 1975 essay, "Carrying Capacity As an Ethical Concept," Professor Hardin illustrated the sometimes dire consequences of "doing the right thing." He describes the impact of Western food and medical aid on Nepal. Population inevitably soared — but with devastating consequences not only for Nepal's environment but also for the people of, surprisingly, Bangladesh:

> *[Nepal's] winters are cold. The Nepalese need fuel, which they get from trees. Because more Nepalese are being kept alive now, the demand for timber is escalating. As hillside trees are harvested in greater quantity, the soil washes down the slopes into the rivers that eventually find their way to India and Bangladesh. Once the absorptive capacity of forest soil is gone, floods rise faster and to higher maxima. In 1974 a catastrophic flood covered two-thirds of Bangladesh.*

In 1974, Hardin published "Living on a Lifeboat." This essay dealt with the ethical problems of a finite world composed of an ever-growing human population.

Imagine that the ocean is filled with many lifeboats — each with a limited "carrying capacity." Suppose people in other lifeboats have reproduced to a level that can no longer be sustained within their lifeboat and therefore are leaping into the water and seeking admittance to our lifeboat. Or perhaps they may simply wish to avail themselves of the amenities with which we have outfitted our lifeboat. The ethical dilemma we must solve is how to deal with these potential "immigrants" in the water.

Professor Hardin discuses three approaches. First, "We may be tempted to try to live by the Christian ideal of being 'our brother's keeper' or by the Marxian ideal of 'from each according to his abilities, to each according to his needs.'" This ethical code will lead us to take in all comers. Since people in other boats are multiplying endlessly, our lifeboat will eventually be swamped. Our conscience will be our undoing.

Second, we may take in no one at all. If this is our choice, given the imperatives of human nature, we had best be prepared to enforce it with arms. "*Stand by to repel boarders,*" in the timeless words of ancient sea captains. To those who object to this alternative, Hardin offers blunt advice: "*Get out and yield your place to others*" [emphasis in original].

The third choice is that, heeding the pangs of compassion evoked by these pitiful strangers, we may decide to take in only a few. But this leads to another problem. Whom do we admit? "How do we

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discriminate?" Such choices are all the more important when we realize that every stranger we admit only increases the odds that we ourselves may eventually be forced into the water. Professor Hardin asks the crucial question:

> *Before we commit ourselves to saving the life of each and every person in need, we had better ask this question: "And then what?" That is, what about tomorrow? What about posterity? As Hans Jonas has pointed out, traditional ethics has almost entirely ignored the claims of posterity. In an overpopulated world, humanity cannot long endure under a regime governed by posterity-blind ethics. It is the essence of ecological ethics that it pays attention to posterity.*

A Family Affair

"Living on a Lifeboat" vividly illustrates the fact that immigration has turned the West into a precarious human commons. Because of its prosperity and social order, the West is a magnet attracting those who cannot create such conditions for themselves. Although we already pay a high price for immigration in crime, taxes, welfare, and destruction of our culture, our children and grandchildren will pay a higher price still:

> *To be generous with one's own possessions is one thing; to be generous with posterity's is quite another... Rejection of the commons is still valid and necessary if we are to save at least some parts of the world from environmental ruin. Is it not desirable that at least some of the grandchildren of people now living should have a decent place in which to live?*

To carry Professor Hardin's argument a vital step further, consider the fact that each lifeboat is not filled with an arbitrary collection of strangers. It is, instead, largely filled with family members, related to each other as an outgrowth of the processes that created today's ethnically-based nation-states. Liberalism's acolytes demand that we *throw our own children overboard* to make room for the strangers in the water.

And yet familial ties are a fundamental part of our character, a heritage of every man, woman, and child on earth, regardless of race or ethnicity. Loyalty to kin has a biological basis, a relationship first hinted by Darwin and later elaborated by a generation of sociobiologists, led by W. D. Hamilton. The key is kinship altruism, the tendency of all animals, not just humans, to make sacrifices for their kin, the most obvious examples of which are the sacrifices parents make for their children.

Kinship altruism also explains why conscience exists today. Conscience-based moral behavior arose as a consequence of altruism within family groups. Conscience has endured because, until recently, Western homelands were relatively homogeneous — constituting, in effect, large extended families of distant cousins. (A recent genetic study reveals that all Europeans descended from a single breeding group of 10 to 50 females.) For thousands of years, no non-kin competed for altruism's benefits. Extension of altruism's benefits to the flood of non-Western immigrants disadvantages Western peoples and their over-active consciences.

Demonizing the inborn tendency of related people to exhibit loyalty to their own kind is not moral behavior, it is an assault on the very core of human existence. Just as nature bids a mother to care more for her own child than those of strangers, so must we each concern ourselves with the well-being of our kinsmen more so than that of immigrants from lands not our own.

Basis of Governments

In any society large enough to preclude individuals from exercising complete control over their own destiny, governments and political systems ultimately determine the fate not only of individuals but of entire peoples. Thus, it is vital to understand the benefits and limitations of social systems, particularly as they bear on the survival of the peoples by whom and for whose benefit they are created.

In his landmark 1971 book, *The Limits of Altruism, An Ecologist's View of Survival*, Professor Hardin defined four systems of societal organization: commonism, altruism, socialism, and privatism. (Commonism should not be confused with *communism* — which is, as someone wrote, socialism out of the barrel of a gun.)

The viability of each system is different depending on whether the commons is sparsely settled or crowded. Under "pioneer" conditions, any of the

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four can be made to work, and each has been tried at one time or another, with varying degrees of success. But systems that work under conditions of abundance begin to break down when carrying capacity is reached and scarcity becomes unavoidable.

As "The Tragedy of the Commons" demonstrates, commonism fails when too many people use the commons. Altruism also has flaws, despite its evident propaganda value to liberals. It is surprisingly similar to commonism, except that it is the altruists who are exploited rather than a physical commons. Privatism, on the other hand, avoids the exploitation pitfall and is a viable system even in times of crowding. Responsibility and self-reliance go hand in hand, a system incorporating values that we view as traditionally Western.

"The importance of selecting a nation's future population based on shared civil interest concerned America's founders. Thomas Jefferson counseled against importing peoples not grounded in "the freest principles of the English Constitution..."

Unfortunately, this value system is not shared by many of today's immigrants. They bring their own culture and value systems, and they seem little disposed to conserve our commons.

The importance of selecting a nation's future population based on shared civil interest concerned America's founders. In his 1781 book, *Notes on Virginia*, Thomas Jefferson counseled against importing peoples not grounded in "the freest principles of the English Constitution with others derived from natural right and natural reason." It was vital, he wrote, "for the happiness of those united in society to harmonize as much as possible in matters which of necessity they must transact together." Otherwise, immigrants:

> *...will bring with them the principles of the governments they leave, or if able to throw them off, it will be in exchange for an unbounded licentiousness, passing, as usual, from one extreme to the other... In proportion to their number, they will infuse into it their spirit, warp or bias its direction, and render it a heterogeneous, incoherent, distracted mass.*

A more apt description of current social and political conditions in America would be difficult to imagine.

Who Will Guard the Guardians?

But what of socialism? This system is also possible, but its Achilles' heel is the fact that it "gives managers first whack at the statistics — which they can alter or suppress to hide evidence of their incompetence." Or their malfeasance. Managers under socialism profit from their favored position, and they have the power to ensure that this unhappy situation is never discovered. Professor Hardin asks, *"Quis custodiet ipsos custodes?* Who shall watch the watchers themselves?"

Combining socialism with universal altruism leads to a system remarkably like that which we endure today. "Managers" of various stripes coerce — or deceive — kind-hearted people into subsidizing endless welfare, foreign aid, and immigration. Through the managers' hands flow the productive bounty of an entire civilization, stolen surreptitiously from unwitting altruists (a bemused taxpaying polity). The outcome of this deceit is the electoral loyalty of those to whom the ill-gotten largess accrues (in the form of welfare and affirmative action) and whose votes, in turn, keep the managers in power.

Despite the fashionable conceit that democracy and free enterprise have routed the worst excesses of socialism, what is happening in the West is recognizably Marxist in design. Universalist altruism has been enlisted as an insidious means of securing wealth and power. It exposes us to exploitation by appeals to our innate sense of moral probity. Says Hardin: "[S]uch verbal devices as 'principles,' 'liberty,' and 'fairness' can be used as competitive weapons."

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And, if those words don't provide sufficient polemical firepower, an arsenal of rhetorical terror weapons waits in the wings, ranging from "mean-spirited," "isolationist," and "bigot" to "racist," "fascist," "anti-Semite," "Nazi" and that ultimate malediction, "hater." Isn't it odd, however, that "Marxist" and "Bolshevik," two of the most deadly ideologies in a century of unprecedented human suffering, are absent from this litany of vilification?

Politics As Destiny

One of liberalism's worst excesses is the fact that it condemns ancient loyalties to family, tribe, nation — and, increasingly, religion — as morally wrong. This attack on human distinctiveness — true diversity, if you will — continues precisely because it benefits politically those who espouse it. The psychological coercion that marks political correctness is not wielded to secure "liberty, fraternity, and equality" for the masses. By "robbing from the rich and giving to the poor," politicians secure the loyalty of the poor as a source of support and therefore of wealth and power. Professor Hardin writes:

> *Why poor people should want to make this transfer is no mystery: But why should rich host encourage it? This transfer, like the reverse one, is supported by both selfish interests and humanitarian ones.*
>
> *The principle selfish interest in unimpeded immigration is easy to identify; it is the interest of the employers of cheap labor, particularly that needed for degrading jobs.*

To Professor Hardin's indictment of employers seeking cheap labor must be added condemnation of politicians catering to minorities. Just as Reconstruction's Radical Republicans exploited the Southern black vote, both parties today pander shamelessly to minorities as a means of attaining power. In such situations, "democracy" is hardly an expression of the "will of the people." Indeed, in a polyglot empire there is no "people," only many "peoples" — all of whom have diverging interests. When applied to "diverse" peoples, democracy simply legalizes exploitation of the commons.

The problem is not that democracy is inherently evil but rather that it has limitations. If the interests of those forced together as voters are sufficiently antagonistic, exploitation of producers by envious have-nots is inevitable. As Hardin notes in *The Immigration Dilemma*, the real enemy of democracy is "diversity":

> *Since diversity is so highly praised these days, it would be well for us to examine the environment needed to foster and conserve this virtue. Many people think that One World — a single political sovereignty governing the whole world — will be achieved some day... Year after year the studies of Freedom House show that the great majority of the nations are not democratically run. In the formation of a single sovereignty, democracy would probably not survive the bargaining of the major non-democratic powers... Unity within nations, coupled with diversity among nations, is surely the best recipe for evolutionary progress in the species as a whole.*

We need not yield to stereotypes of superiority and inferiority to justify preserving the distinctiveness of the world's peoples — a distinctiveness that immigration irretrievably destroys. Distinctiveness, and the divergence of interest that accompanies it, is an inseparable part of human nature. The altruistic impulse that submits to its dissolution is misguided — as well as futile. In *Creative Altruism, An Ecologist Questions Motives*, a 1999 rewrite of *The Limits of Altruism*, Professor Hardin writes:

> *In the absence of competition between tribes the survival value of altruism in a crowded world approaches zero because what ego gives up necessarily (by the definition of the rules of One World) goes in the commons... [I]f we desire a world in which altruism can persist we must reject the ideal of One World and consciously seek to retain a world of more or less separate, more or less antagonistic units called (most generally) tribes. They may be synonymous with nations as we know them, or they may be some new political invention.*

Melting Diversity

Attacking "diversity among nations" was exactly the point of Emma Lazarus' Statue of Liberty poem and its ideological companion, Israel Zangwill's stage production *The Melting Pot*. These saccharin

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propaganda pieces served as spin control for an emerging immigrant elite at the turn of the twentieth century — many of whom were Marxist-leaning Eastern Europeans sharing religious and cultural ties with Lazarus and Zangwill. These tear-jerkers helped dispel native disquiet over a growing immigrant population that threatened America's traditional culture and national interest. As propaganda they were masterpieces, delivering cheap labor to America's capitalists and political power to its social revolutionaries.

The disarming assertion of *The Melting Pot* was that the alchemy of assimilation would soon mold Eastern and Southern European immigrants into model Anglo-Saxon Americans, leaving America's culture intact. Neglected was the fact that, historically, the more likely outcome was Balkanization. A century later, disunion is well advanced. Meanwhile, the melting pot has transmogrified itself into a diabolical instrument for gaining an end precisely the opposite of its original advertised purpose. Now it demands nothing less than the complete amalgamation of ethnic groups and races.

Far from being the culture to which immigrants should assimilate, European-descended America is commanded to discorporate. Forcing disparate groups together does not conserve diversity, it destroys it. Destroying human distinctiveness — whether that distinctiveness is called tribes, nations, religions, ethnic groups, or races — is an act of aggression. It matters not whether the reason is misguided humanitarianism or something altogether more malevolent.

Western Survival at Stake

In an aptly titled 1971 essay, "The Survival of Nations and Civilizations," Hardin strips away feel-good illusions and forces attention onto the ultimate issue that confronts us—our continued existence as a distinct people. Professor Hardin writes:

> *If we renounce conquest and overbreeding, our survival in a competitive world depends on what kind of world it is: One World or a world of national territories. If the world is one great commons, in which all food is shared equally, then we are lost. Those who breed faster will replace the rest. Sharing the food from national territories is operationally equivalent to sharing territories: In both cases a commons is established, and tragedy is the ultimate result.*

In the competition for living space and resources between two species (or two groups that occupy the same ecological niche), one will inevitably and inexorably eliminate the other:

> *[I]n a finite universe—and the organisms of our world know no other—where the total number of organisms of both kinds cannot exceed a certain number ...one species will necessarily replace the other species completely if the two species are 'complete competitors,' i.e., live the same kind of life.*

If carried to its logical conclusion, our "melting pot" ethic can only result in the inexorable eradication of *our* distinctiveness. Others not fettered by fastidious consciences will occupy the land and multiply to the utmost limit. There is a word to describe this outcome: "It may be that no one is ever killed; but *the genes of one group replace the genes of the other. This is genocide*" [emphasis added].

In a world rendered increasingly interdependent by communication, transportation, commerce, migration, resource exhaustion, environment destruction, and carrying capacity limits, the question of whether historic peoples and cultures will endure has become the paramount issue for Western civilization and its founding people:

> *The spectre of survival now haunts ethical thought. Attempts to settle the egoism versus altruism issue, to unsnarl population problems, and to lay out the grounds on which international relations can be rationalized all end up with the word survival —*

The tragedy of the West's moral outlook — based as it is on altruism, compassion, and conscience, seemingly humanity's highest ideals — is that it has become *the* threat to survival for the West. Our "commons" is more than just our land. It includes the entire social and cultural fabric of the West — the culture, traditions, values, prosperity, and ordered liberty created by countless generations of ancestors. Immigration is a death sentence for our children's children. Its repeal is a moral imperative. ■

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Garrett Hardin: An Appreciation

Learning about ethics for the long term

by Georgie Anne Geyer

My first impression of Garrett Hardin, when we had lunch in Washington several years ago, was what a gentleman he was! A brilliant scientist and a courtly man then in his eighties who moved carefully with a walker, he was still filled with a youthful, effervescent joy in life. I looked at this fine man and this consummate intellectual across the table and shook my head: How could one countenance for a moment those people who liked to accuse him of being "nativist, bigoted and xenophobic?" Such rhetoric was appalling.

We started out that day with his telling me a story, in fact his quintessential story of our times, one about India, harvests, and the environmental impact of immigration and population. It was one that surely underlined immediately the ethical questions of carrying capacity and environment and which illuminated those neglected areas of foreign policy and of missionary work involved in the entire immigration/citizenship question.

"Think of things this way," he began. "In 1966 to '67, India had a shortfall in agricultural production. America sent ten million tons of grain to India. (One ton of grain keeps five people alive per year.) Then, in 1968, we did not send grain. I went to India for an interview with the planning commission and they told me, 'When word came down that there would be no grain in 1968, at first we were very angry; we even thought we had been double-crossed. But, having been told that, we exerted ourselves to provide grain for our people, and now we are out of the woods. It was one of the best things that ever happened to us."

The Socratic Mr. Hardin then leaned across the table and asked me, "Let us grant ourselves the most malevolent of motives: Let us ask, 'How can we harm India — *really* harm her?' Quite simply, by sending India a bounty of food, year after year."

To me, he stood for a different worldview, different particularly from welfare-state professionals, both national and international. This was the man who early on described the earth as a "lifeboat"; who coined the more discriminating word "commonism" to replace "one-worldism"; and who managed to make "global" America's own nagging welfare-state worries.

But to understand Professor Hardin, one has to go back to his first really public "shocker." It was 1968; innocently (or at least, so he would have us believe) he wrote a little treatise, "The Tragedy of the Commons," which stunned the scientific community and is now published in one hundred different anthologies and quoted in hushed voices in arcane academic circles. Unlike private property, he begins in his now-classic paper, a commons is a "resource to which a population has free and unmanaged access." It is fine so long as the commons is managed by someone, and so long as the people do not overgraze it or generally overstress it. But if, say, each herdsman increases his own herd at the expense of the commons, very soon there is disaster ahead for everyone.

By the time we met, Hardin, no stranger to controversy, had extended his thesis to the even more emotion-laden field of immigration and citizenship. He was professing that our unassessed immigration policy, which had as yet seen no rational debate, was one of the major causes of

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Georgie Anne Geyer *is a nationally-syndicated columnist. This tribute incorporates portions of her book,* Americans No More: The Death of Citizenship, *which is available from The Social Contract Press, 1.800.352.4843.*

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America' s ten-million-unemployed problem and of a general diluting on all levels of America's seminal responsibility to its own citizens.

Hardin dismissed (his term) "indiscriminating altruism" and (my term) the "compassion professionals" who have given us everything from essentially counterproductive food programs in India to welfare programs in America that destroy the recipients' spirit and incentive. As he again made his point that true compassion can be given only to those close to you, he reminded me of the French socialist thinker Pierre-Joseph Proudhon, who captured the meaning of real compassion in the last century, saying, "If everyone is my brother, I have no brothers."

"Charity begins at home. Why the restriction? Because the greater the distance between donor and recipient, the more likely it is that well-meant charity will cause more harm than good."

— Garrett Hardin

Before we left each other that day, I reminded him that "People say you're hard-hearted. Are you?"

He smiled his warm and intelligent smile. "My thinking appears to be hard-hearted — in the near term," he answered. "But that is because I am trying to protect future generations. So, really, I am soft-hearted in the long run."

What differentiates Professor Hardin from the masses of "thinkers" who accept without question whatever fashionable theories about human nature and human development are prevalent at the moment lies in the fact that he deals with ethical questions, with first principles, and with first responsibilities. He looks at the crucially important ethical question of how and when to be "my brother's keeper" without cant and with what I believe to be true love and genuine sentiment.

"Traditional ethics has an answer to this problem," he says. "Charity begins at home. Why the restriction? Because the greater the distance between donor and recipient, the more likely it is that well-meant charity will cause more harm than good."

Moreover, the ethical imperative grows ever more intense when we study the real outcome of pushing for uncontrolled immigration — and the concomitant lack of assimilation that invariably attends it. Because, as Hardin says, "when immigration is at a slow rate, cultural and linguistic distances can be overcome. But when immigration is very rapid … the result is conflict."

As for the general altruism of loving everyone in the world and neglecting the reasonable welfare of one's own, perhaps Austrian economist Friedrich von Hayek demolished that pretense most effectively. Loving all the world is a "meaningless conception," he said, emphasizing that man can care only for specific individuals in concrete circumstances.

Hardin reflects that idea as well as that of the great diplomat George Kennan who has written that, by absorbing the poverty of the Third World, the more prosperous society "is sometimes quite overcome in the long run, by what it has tried to absorb." Any more prosperous society then diminishes itself so that it is no longer an example to the world, and necessarily diminishes the only hope that the poorer countries have to emulate and learn from.

Who belongs? *To whom is our primary responsibility? Where does it begin? Where does it end? What responsibility do I have to my family, to my immediate fellows, to my fellow citizens, to the stranger?* These questions are dealt with by most of the world's great philosophers, not to speak of many more of the not-so-great, and in every sacred book from the Bible to the Koran. And no one in our present generation has dealt with them with more depth and intelligence than Garrett Hardin.

I felt that I had been in the presence of a great man. ■

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Garrett Hardin: Salute to a Prophet

by Walter Youngquist

In 1968, the United States produced more oil than it used. Now it imports more oil than it produces. The world now consumes twenty-seven billion barrels a year. Water tables are declining worldwide, particularly in India and China where populations have boomed. In the United States in 1968, the Colorado River flowed into the Gulf of Lower California. It no longer reaches the sea. The "commons" of world oil and water supplies now have unsustainable demands upon them. These and many other examples illustrate the concept of the "tragedy of the commons" — more and more people drawing from limited resources, some taking more than others.

But in 1968 this was apparent to only a few. Garrett Hardin was one. That year Hardin delivered his essay "The Tragedy of the Commons" as a presidential address before the Pacific Division of the American Association for the Advancement of Science. Later published in *Science*, it has since been reprinted in twenty-seven languages. The message of the commons is even more relevant today than when it first appeared. Hardin summarizes: "The population problem has no technical solution; it requires a fundamental extension in morality."

Growing problems of human existence are honestly confronted by few individuals. Good news sells, but bearers of unpopular realities are not happily received. It takes courage to carry such tidings. For nearly fifty years Hardin has stated sometimes unpopular truths. A scientist and a moralist, Hardin asks essential questions.

Today's citizens in industrialized countries enjoy unprecedented prosperity, but some are becoming aware of the problems of population and resources. Since "The Tragedy of the Commons" was published, world population has almost doubled. Hardin's book *Exploring New Ethics for Survival on the Voyage of Spaceship Beagle* (1972) examined the concept of sustainability and optimum population size. He asked how this will be accomplished: by intelligent choice, or by nature's harsh realities. These thoughts in 1972 were ahead of their time, but given today's understanding of environmental interconnections, Hardin's concerns were prophetic.

"Good news sells, but bearers of unpopular realities are not happily received. It takes courage to carry such tidings. For nearly fifty years Hardin has stated sometimes unpopular truths. A scientist and a moralist, Hardin asks essential questions."

Another early volume, *Stalking the Wild Taboo*, addressed the issue of abortion. Today's strident discussions of this and other population issues demonstrate that science and morality are inexorably intertwined. In *Living Within Limits* (1993), Hardin explores another sensitive issue, immigration. Here the concept of "lifeboat ethics" and the idea of "equality" emerge. A ship carrying a hundred people is sinking. There is only one lifeboat which can hold ten people.

Walter Youngquist, Ph.D., *is a consulting geologist who has studied the relationship between Earth's resources and its population in over seventy countries. A Fellow of the Geological Society of America and the American Association for the Advancement of Science, as well as author of* GeoDestinies, *he makes his home near Eugene, Oregon.*

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Do the ten in the lifeboat make it to the far shore safely, or do they take responsibility for the ninety in the water and attempt to take them aboard, whereupon the lifeboat sinks and everyone drowns in perfect equality — and catastrophe?

The heading of one section in *Living Within Limits*, "Population Growth, Destroyer of Dreams," asks what qualities of life population growth destroys. Clogged freeways, two-hour commutes, standing in long lines, open space and wildlife habitat converted to subdivisions and malls are everyday examples. Hardin again raises a key issue of our time in asking how population growth impacts individual experiences and aesthetics — our quality of life.

Hardin's most recent book, *The Ostrich Factor: Our Population Myopia*, again sets scientific knowledge alongside moral goals by addressing the politically sensitive topic of immigration. He asks that we look dispassionately at the essential issue: the inseparability of population size and the resources needed to support it. Energy supplies (even renewables) and water resources, two of life's basics, are finite. Immigration is often only understood as a moral question, but Hardin reminds us of the interconnection between population and physical science, exposing the myth of unending abundance supporting an ever-growing human population.

Garrett Hardin has accurately, perceptively, and courageously presented the fundamental issues of human survival. His contributions will remain relevant as long as humanity exists. The good news is that Garrett Hardin is active, and writing another book. ■

Garrett Hardin:

Thank you for teaching us how to keep growing when resources keep dwindling

by John F. Rohe

Quite by accident you find yourself seated next to Garrett Hardin at a conference. During a break, as the attendees gravitate toward exits, the air comes alive with exchanges among old friends and new acquaintances.

Dr. Hardin turns your way while reaching for his crutches. In a distinctively warm and congenial style, he gestures with a cordial nod. His expressive eyes and gentle smile invite a conversation.

You are now face to face with the person who framed the ethical considerations for the pro-choice movement. Greetings are exchanged, and your awareness of the surrounding room abruptly fades. Poised for a conversation, in a split second your mind races through cascading images of his life story.

You reflect upon Dr. Hardin's textbooks used in your biology classes many years ago.

You recall that fertility rates in the United States plummeted from 3.5 children per woman in the 1960s to 1.7 within a single decade. Fertility rates also dropped in Europe, the Pacific Rim, China, and (at glacial speed) in the so-called "Third World." Dr. Hardin's soft voice carried a heavy message as the population growth rate tumbled.

He was on the front lines during a paradigm shift. He deftly pierced conventional assumptions in making sense of the world. He taught us how to keep growing in a world where resources keep dwindling. We knew he was referring to the mental growth needed to comprehend our fragile surroundings when he spoke of the need for more growth.

Physical challenges in his childhood impeded outdoor activities. Meanwhile, he was introduced to the classics by his elders. These early experiences

John F. Rohe *is an attorney in Petoskey, Michigan with a long-standing concern for the environment. He is the author of* A Bicentennial Malthusian Essay: Conservation and the Indifference to Limits, *available from The Social Contract Press, 1-800-352-4843.*

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conspired with an inquisitive mind. Unique insights and a historical frame of reference enabled him to apply a blend of intelligence and cynicism. This allowed him to probe the unexamined convictions of our times.

He unveiled the operative forces behind our destructive potential even as the effects were eluding cautious observers.

When bankers, brokers, and financiers quipped, "There's no free lunch," he would courteously remind them that the assumption of a "free lunch" on the environment underlies our economic system. Hardin dwells in a world of ecological, biological, economic, and ethical reality.

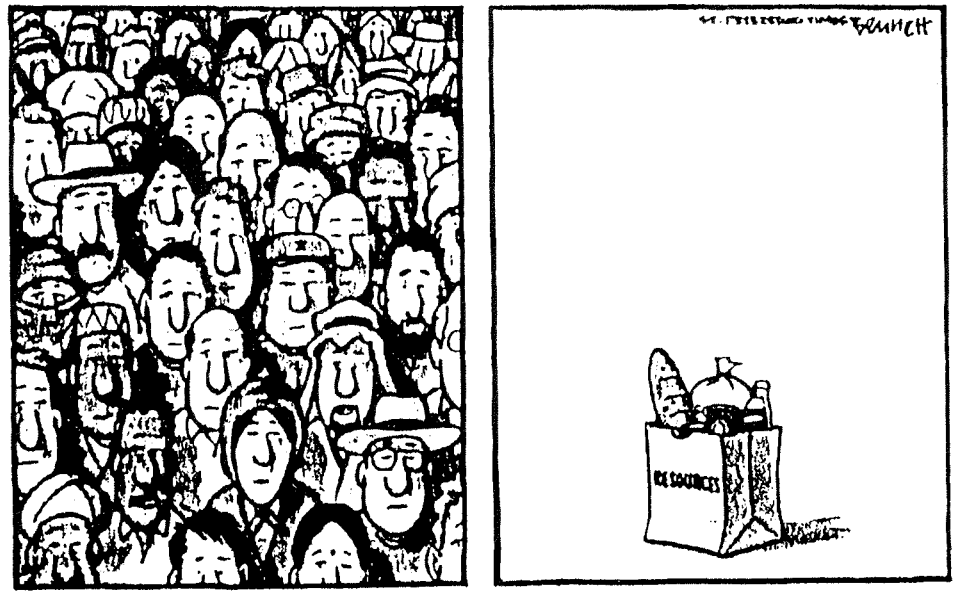
As he is seated next to you today, this man comfortably inhabits a future domain. As his thoughts are often ignored in the present day, you know that the future will claim him. His ethics belong to the future, and perhaps he does too. They will claim his ideals and his cherished values.

Ortega y Gasset reminds us that, "The metaphor is probably the most fertile power possessed by man." In a split second, while formulating thoughts for a discussion with Dr. Hardin, you reflect upon the "Tragedy of the Commons." This essay was first published in 1968 by *Science* magazine. It also became the very first article in the inaugural issue of *The Social Contract* eleven years ago. With brevity and clarity, Garrett bestowed "the commons" upon a pasture, and a powerful metaphor upon all of us.

In drawing analogies between "the commons" and pauperized ecosystems, contaminated groundwaters, squandered biodiversity, and degraded air, Dr. Hardin clarified the faulty assumptions in our economic system. The failure to depreciate manmade assets (vehicles, buildings, etc.) in an accounting curriculum would surely draw a failing grade. Yet the same curriculum will ignore the depreciation of our natural surroundings! With one small essay and a powerful metaphor, the flat-earthers in macroeconomics had met their Columbus. Dr. Hardin's metaphor gave us a way to explain the human predicament for the twenty-first century.

As you struggle for the right words to start the conversation, you realize that a "thank you" will fall short of the mark. How do we thank someone for sharing their accumulated wisdom and ingenuity in the face of bitter criticism and opposition? How might we, today, extend a token of appreciation for his courage and resilience in advocating for our successors? "Thank you" will just not suffice. We need a bigger word — a more expansive concept.

Unable to summon the right expression of gratitude for his ingenuity, his resourcefulness, and his commitment to our children and our children's children, we remain humbled by our inability adequately to frame our appreciation for such a gift. ■



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Garrett Hardin, Ph.D.
Awards, Honors, and Milestones

1930 Grand Prize, Chicago Daily News Essay contest (Age 15; essay on Edison)

1932 University of Chicago, Scholarship

1932 Chicago College of Music; Scholarship in Dramatic Arts

1942-46 Staff Member, Carnegie Institution of Washington, Division of Plant Biology, Stanford, California

1946- 78 Ascending faculty positions in the Department of Biological Sciences, University of California, Santa Barbara (UCSB)

1952-53 Ford Fellow, California Institute of Technology

1963 Became Professor of Human Ecology. University of California, Santa Barbara

1964 Visiting Professor, UC. Berkeley

1964 Remson Bird Lecturer, Occidental College

1966 Faculty Research Lecture, UCSB (All-campus honor)

1968 "The Tragedy of the Commons," *Science* 162: 1243-1247

1970 Visiting Professor, University of Chicago

1970 Nieuwland Lecturer, University of Notre Dame

1970-71 National Visiting Lecturer, Phi Beta Kappa

1972 Messenger Lecturer, Cornell University

1972- 73 National Lecturer, Cornell University

1972- 73 National Lecturer, Sigma Xi

1973 Environmental Hall of Fame Award, Friends of the Earth ("The single author who had the most different titles mentioned by voters")

1973 Elected Member, American Academy of Arts and Sciences

1974 Elected Member, American Philosophical Society

1974 Aquinas Foundation Lecturer, Drew University

1974 Tracy I. Storer Lecturer, UC, Davis

1975 Elected Honorary Member, National Association of Biology Teachers

1975 Honorary Doctor of Humanities, University of Puget Sound

1975-76 Member, Advisory Committee on Ethical and Human Value Implications of Science and Technology; National Endowment for the Humanities & National Science Foundation

1976 Fatten Foundation Lecturer, Indiana University

1977 Honorary Doctor of Humane Letters, Northland College

1978 The Institute for Scientific Information announced that Hardin's 1968 essay, "The Tragedy of the Commons" was "one of the most cited items in its field" in the Social Science Citation Index and the Science Citation Index

1978 Became Emeritus Professor of Human Ecology, UCSB

1978 Lecturer, Dartmouth College (Chosen by students)

1979 Jesse and John Danz Lecturer, University of Washington

1979 Chief Executive Officer and Board Chairman of the Environmental Fund, Washington, DC

1980 Margaret Sanger Award, Planned Parenthood Federation of America

1986 Distinguished Service Award, American Institute of Biological Sciences

1987 Mack Lipkin Lecturer, American Museum (N .Y.)

1989 Humanist Distinguished Services Award, American Humanist Association

1990 Award, Federation for American Immigration Reform (FAIR)

1990 Honored by day-long symposium given by the American Institute of Biological Sciences at the Smithsonian Institution on the occasion of his 75th birthday. Proceedings published as Festschrift in *Population and Environment*, vol. 3.

1991 Inaugural Lecturer, Cook-DeWitt Center, Grand Valley State University, Michigan

1992 The Pacific Division of the American Association for the Advancement of Science, in its June meetings, presented a symposium on "The Tragedy of the Commons: A Retrospective"

1994 Phi Beta Kappa Annual Award in Science, for the book, *Living Within Limits*, Oxford University Press, 1993

1997 Constantine Panunzio Distinguished Emeriti Award, honoring continuing scholarly productivity following retirement. Given to one faculty member each year from the nine campuses. In its first decade, this is the first time it has been awarded to a member of the Santa Barbara campus

1997 As of June, "The Tragedy of the Commons" had been reprinted over one hundred times, in anthologies in the fields of biology , ecology, environmental sciences, law, economics, sociology, political sciences, philosophy, ethics, and English composition

1997 Revised edition of *Mandatory Motherhood: The True Meaning of "Right to Life"* published, Fall, The Social Contract Press

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Protection, Yes. But Against Whom? For Whom?

by Garrett Hardin

I would like to discuss some of the great generalities about environmental protection that lie at the foundation of what we are all trying to accomplish. Foundations are often neglected because we are so busy working on the upper stories, correcting the previous inconsistencies. Many of the objections we encounter (as well as the support that we fail to get) arise because we have not considered the implications of our assumptions.

For example, environmental reforms are often impeded by tacit assumptions about the meaning of *property*. Most people assume that this is a simple idea, that property is a thing, the way specific gravity is a "thing." But, of course, it is not at all; "property" is an interpretation of the relationships between people. My friend, Dan McKinley, once protested that "private property includes the smokestack, but not what comes out of it." And that is the problem. To be ecologically acceptable, the concept of property must weld privilege and responsibility together. He who benefits from the products must accept responsibility for the by-products. This is a shocking idea for people brought up on a simpler view of "private property."

Ecologists are trying to teach people what can only be called "total economics." Card-carrying economists do not like this interpretation. They think of economics as one of the great academic disciplines, with ecology as no more than a problematic one. In contrast, ecologists focus on the relationships between peoples and many other elements of "the real world." From that perspective, economics is just one subdivision of ecology. This attitude does not get us any Nobel Prizes, of course, or even attract many friends from the competing discipline. Our excuse: society must learn to deal with all aspects of the humanity-environment interchange.

The most basic fact in human ecology is this: We human beings create nothing. We merely take the atoms the earth gives us and, using the sun's energy (sometimes in fossilized form), *re*organize them into arrangements that are better suited to our purposes. For example, we cite figures on "the yearly production of petroleum." Question: How many barrels of petroleum did human beings produce last year? The correct answer is zero. We extracted the petroleum from the earth and burned it, deriving energy thereby. We certainly did not truly produce any oil. All we do is transfer commodities from the account called "nature" to the account called "human society."

Legions of influential people casually identified as "well educated" live by persuasive superstitions. In the early 1990s, Malcolm S. Forbes, Jr., the editor-in-chief of *Forbes* magazine, wrote: "Overpopulation is all nonsense. Since Malthus' time, the Earth's population has increased six-fold and the standard of living has become infinitely higher." So here is a man who is certainly "educated," yet he gloriously supports the superstition that perpetual growth is possible in a severely limited world.

Evidently there is more than one kind of education. I think it helps to distinguish three kinds of competence produced by education. I will refer to the variety as three kinds of intellectual filters. The oldest

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is literacy, which can be defined as competence with words, whether the result is expressed in speech or in print. In the 1950s, someone coined the term "numeracy" to stand for a second kind of filter, which is coupled with a facility in using numbers and quantitative reasoning. Speaking broadly, we may say that, as a class, scientists are more numerate than the typical novelist or poet. Journalists, who should be both literate and numerate, are often weak in the second area.

Beginning about 1960, with the sensitization of the public to the importance of ecology and environmentalism, it became apparent that there needed to be a third intellectual filter, which was soon called "ecolacy." This orientation implies sensitivity to "And then what?" types of questions, and to the ability to see and predict subtle and delayed interactions of many influences.

Over time, for example, a herbicide may have an important side effect on herbivores, thereby diminishing its value to humans; an insecticide may kill more than just harmful insects. Bactericides may select for inheritable resistance not only among useful microorganisms, but also among the harmful ones. So widespread are these effects that, as a working hypothesis, we now say that each blank-icide selects for its own defeat as a controller of the unwanted blank. Not meliorism, but rather pejoration, is the new expectation in the Era of Ecology.

The ecolate view is not welcome to timid minds. Even if you come up with a true answer, you may have a hard time persuading others that you are on the right track. But we have to try. Literacy, numeracy, ecolacy: We need all three abilities.

We moderns are following in the footsteps of the old Romans who habitually asked, "*Cui bono? Cui malo?*" Who is benefitted (by a new measure), and who is harmed? Though the word "society" is grammatically singular, the reality is very plural indeed: Many people, many vested interests. Whenever we propose changing a system of reward and control, we must try to predict who will be harmed, and who helped, by the change. Most pressing is the need to foresee how those who are harmed will respond to the change. We must not forget that we cannot just throw away unwanted things. In whose backyard might they land? What is he or she then likely to do about it? Such questions must be ever in the forefront of the environmentalist's mind.

Numbers influence results; situation ethics acknowledges this. The relative blindness of traditional ethics to real-world situations creates ever-new problems for environmentalists. As long ago as the fourth century A.D., one of the Fathers of the Christian church, Tertullian, implied as much in a passage that has shocked many traditionalists over the centuries: "The scourges of pestilence, famine, wars, and earthquakes have come to be regarded as a blessing to overcrowded nations, since they serve to prune away the luxuriant growth of the human race."

"The ecolate view is not welcome to timid minds. Even if you come up with a true answer, you may have a hard time persuading others that you are on the right track. But we have to try. Literacy, numeracy, ecolacy: we need all three abilities."

A standard reaction to that statement is that the writer must really have hated human beings, since he saw some good in death. But let us take a second look. Note, first, that Tertullian implies that this was not a new thought in the world: He says that the negative factors (disease, etc.) "have come to be regarded" as benefits, in part. He did not originate the thought; he merely reported it. The second thing to notice is the agricultural image that shaped Tertullian's words. He says that pestilences can be regarded as blessings because "they serve to prune away the luxuriant growth of the human race." That is both a numerate and an ecolate contention, since it implies the reality of limits and carrying capacity. And "pruning" is an eminently agricultural figure of speech: A city dweller would be unlikely to use such language. These days most Americans are born and raised in cities; for that

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reason they seldom think in the rural images implied by the concepts of carrying capacity, overpopulation, and pruning.

It is amusing to observe the results of citified thinking when a long-time urban resident moves to more spacious suburbs and decides to have a garden. He is almost sure to plant seeds too close together, being poor at imagining the future as biological expansiveness threatens the inflexible limits of the environment. As his crowded plants get bigger, he has trouble bringing himself to thin them out: Long exposure to the propaganda resident in the phrase "the sanctity of life" has stunted his imagination. Citified persons need to muster courage to reject the "civilized" images they were brought up on as they liquidate the excess members of the population of plants for the sake of a fraction that can survive into the future in a state of vigorous health. Ours is now a thoroughly citified world. To save civilization, we must educate its citified denizens to understand the language of agriculture and the environment. People must become ecolate in their thinking.

By virtue of the content of their specialty, economists should be among the principal supporters of ecolate thinking. Unfortunately, the accidents of history have made them powerful opponents of the concept. Through and through, their theory assumes limitless supplies. This has led to the amazing assumption that if a society wants more of a good thing, it has only to raise the price of it and supplies will increase without limit. Julian Simon and Herman Kahn stated in 1984 that "the term carrying capacity has by now no useful meaning." It is true that when we are dealing with the earth's carrying capacity for human beings, there is considerable wiggle room for variations in the standard of living assumed; but wiggling at what cost?

One of the peculiarities of modern economics is that though the indexes of elementary texts sometimes include the entry "diseconomies of scale" — the important observation that in many situations, beyond a point things may get worse as size or numbers increase — the subject is not treated extensively in most of them. But the positive economies of scale are always dwelt upon at length. One can only conclude that both sales personnel in business firms and economics professors in colleges know that optimism pays.

In the opinion of human ecologists, the bottom line of economic and political organization is this: With unfettered growth, diseconomies of scale rule. Consider democracy, for example. As the number of participants grows, a reasonable facsimile of true democracy is still possible — up to about 100-150 souls, according to the centuries-old experiments of the Hutterites, an earnest religious group in the northwestern United States. Beyond that point, the greater the population, the less the democracy, and eventually it must be abandoned and replaced by some sort of representative government. But were we to achieve the idealists' dream of "One World," our schoolbooks would no doubt crow about a global democracy of ten billion people. "Democracy" is a sacred word, and sacred words cannot be easily replaced by the truth.

More generally, many aspects of the quality of human life are negatively related to the number of people living in the community, once it exceeds a certain size. If every family now living on Earth is to have two automobiles, the number of families living on nature's bounty will have to be markedly reduced. The question that begins with "How many people... " is meaningless if it is not preceded by the question, "What kind of life..." Widespread agreement on the second question will be hard to achieve; once it is introduced, the pejorative word "elitism" is likely to dominate the discussion.

Reaching a community-wide agreement on the size of the population to strive for involves not only scientific questions but also arbitrary decisions. Unfortunately, the word "arbitrary" is understood differently in science and law. In the law, the word is used with obvious distaste. By contrast, scientists frankly defend the word and its related practices, particularly in the field of statistics, where an arbitrary standard of significance has to be agreed upon. If you want to make one in twenty the limit for non-significant deviation from pure chance, fine. If you choose one in one hundred, also fine. But in every contested case some arbitrary decision has to be made. (Actually, John Q. Citizen makes such decisions every day, but he may not be aware of this fact.) If you cringe at "arbitrary," you might try to coin a new word.

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The ecologist's basic question of "And then what?" runs all through human affairs. Different stages in the development of a nation may evoke different answers. For example, in this country, there was a time when Kit Carson, traveling across the prairies, would shoot a buffalo, cut out the tongue for eating, and leave the rest of the carcass to rot. "What a waste!" we say now, but the lonely horseman had no refrigerator with him; and for him to interrupt his journey to build a fire (with what fuel?) and smoke-dry the extra carcass would involve wastes of other sorts. "Waste" is defined by circumstances.

The ecologist's "And then what?" needs to be applied to one of the most ancient of the commandments in the Bible: "Be fruitful and multiply." The rabbi who wrote this was living in a village, and it was a village version of morality that he was calling for. In a world of many separate villages, tribes, and ethnic groups, vigorous reproductive competition arises naturally. (If you do not believe that, read the Old Testament.) Other things being equal, fast multipliers win out over slow ones.

Circumstances have changed now, but most ethnic groups continue to follow the biblical advice just cited. We are thus laying the ground for the great tragedy that would follow from transgressing the carrying capacity of the earth, unless we somehow find the wisdom and ability to come to grips with the situation. There may not be much time, but we do not have too many other choices.

As you can see, ecological analysis is not for the faint of heart. ■

There Is No Global Population Problem

by Garrett Hardin

Almost two hundred years have passed since Malthus disturbed the world's slumber with his celebrated *Essay on Population*. Today, the world has more than five times as many people in it, and the rate of population increase is nearly four times as great as it was in Malthus's day. Each year, the globe must support 90 million more people. Population control is needed.

Many plans have been proposed, and some have been half-heartedly tried. Out of these trials has come the realization that we are caught in what novelist Joseph Heller called a "Catch-22" situation: *If the proposal might work, it isn't acceptable; if it is acceptable, it won't work.*

Unacceptable schemes to control numbers are easy to find. We could elect a dictator and let him shoot the excess population. But we won't. Such a solution would "work" only in a theoretical, beyond-politics sense. (*Homo sapiens,* the political animal, as Aristotle called the human, does not live "beyond politics.") Or we might take no action while waiting for gross overpopulation to produce its own cure in the form of starvation and mass disease. But who is willing to call such inaction a "solution?"

Looking at the other fork of the population Catch-22 is more productive. When we understand exactly why acceptable proposals fail, we may be able to correct them. Humanists, committed to the rational analysis of problems, are in a favorable position to ferret out workable solutions. But a real solution to overpopulation may be as painful to humanists as to others. An effective solution will not be obvious, for, as Freud taught us, the preconscious mind protects its peace by blocking off painful avenues of thought.

The simplest defense against dangerous thinking is to presume a natural self-correcting

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mechanism. Such a presumption worked pretty well in economics in Malthus's day. Hitherto, some governments had fixed prices to keep greedy merchants from fleecing their customers. Unfortunately, price-fixing caused more harm than good. Leaving prices free to fluctuate — "laissez-faire economics" — worked better. Merchants who were too greedy got less business; some of them went broke. Overall, laissez-faire benefitted the consumer by producing low prices.

Reasoning by analogy, some optimists in the twentieth century have argued for a laissez-faire approach toward population growth. They postulate a "demographic transition" process that automatically stops population growth before it hurts. Since European fertility fell as Europeans became richer, it was argued that all we need to do to help today's poor countries is to try to make them rich. The past half-century has shown that a laissez-faire approach toward population growth fails. The needy poor greatly outnumber the charitable rich, and the poor breed faster. Africa's numbers are increasing more than ten times as fast as Europe's.

The argument that greater prosperity produces lower fertility has some support in rich countries, where the industrialized, urbanized way of life leads many couples to prefer a better automobile to another child. In poorly industrialized, rural nations, an increase in income translates into more medicine, less infant mortality, and a faster rate of population growth. The ancient saying, "The rich get richer and the poor get children" has more wisdom in it than does the demographic transition theory.

China may have found a way out of the population trap. What is China doing and what can we learn from its experiments? We must begin by acknowledging that we don't know as much as we would like to about that huge country. China's population is four times as great as that of the United States. Government policy seems not to be very stable; outsiders need almost daily quotations to know what is going on there. Nevertheless, some parts of China are governed in such a way that ultimate population control looks like a possibility.

In the large industrialized cities, an important decision-making unit is the "production group" — individuals who work together in the same factory. In attempting to control population, the government has assigned a key role to female members of the production groups. The central government tells each group what its budget is for the next year — how many bags of rice, for instance, as well as how many babies the group as a whole can produce. It is made perfectly clear that exceeding the baby budget will not result in any increase in the food budget, either then or later. It is left to the local group to decide which of its members will be allowed to have babies in a given year.

There is no talk in China of a woman's "right" to reproduce or of married couples' "right to privacy." Decision-making is the right of the production group because the whole group has a budget to meet. The women of a production group meet together and decide as a group who shall and who shall not have babies during the year. Can you imagine such a scheme working in the United States?

In China it works, apparently pretty well. Chinese traditions and cultural ideals make it easier to put the good of the group ahead of individual desires. A woman who gets pregnant without permission is pressured by her sisters to have an abortion. Westerners react with horror to this, but such coercion in the East should be compared to forcing a Westerner to pick up the litter he or she has dropped on the ground in a public park. In both instances, the environment is seen as the possession of the group; littering it (with anything) is not a right of the individual.

Why are Chinese women controllable by coercion? The answer, in a word, is *shame*. A truly socialized individual is ashamed to go against the expressed wishes of the group he or she lives and plans with. Shame is an effective control, *provided the number in the group is small.*

That numbers play a role in shaping human behavior we know from the experiences of the Hutterites on our own continent. This hard-working religious group lives by the Christian-Marxist ideal expressed so well by Karl Marx in 1875: "From each according to his ability, to each according to his needs." Two

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centuries of experience have taught the Hutterites that this ideal works only within small groups, 100 to 250 as a maximum. When the number of the operating community is small, backsliders can be shamed into behaving better. When the number goes beyond 150, non-cooperators destroy social unity. Hutterites respond to this threat by constant, amoeba-like fissioning of their communities, thus minimizing the numbers involved in decisions.

The combined experiences of the Chinese and the Hutterites tell us that a voluntary system of population control, when it is *not* backed by legal sanctions, can work only with small groups of people who are intimately involved with one another daily. Shame works when "everybody lives in everybody else's pocket."

So, what are the chances that American society as a whole can achieve population control by voluntary means? Essentially zero, at present. We have nothing like the Chinese production groups to build upon. If we cannot or do not want to evolve in the Chinese direction, we will have to find a means of population control that builds on the traditions of our own society.

Let's look again at the Chinese system. I don't know whether the Chinese language has any equivalent for the word *coercion*, but if it does I see a way the Chinese could acknowledge the propriety of their population control without cringing at the word *coercion* as we Westerners do. Each woman in a production group must realize that the others need to be controlled by the coercion of shame and that she herself can be no exception. The control of all is achieved by *mutual coercion, mutually agreed upon.* Mutuality removes the sting that would come from being singled out of the group.

Can such coercion be generated in our society? Of course it can. In fact, it has been from time immemorial. "Mutual coercion, mutually agreed upon" is an apt description of *any* restrictive law passed by a democracy. I might want to rob banks, but I certainly don't want *you* to do so. So, since I know of no way to keep all others voluntarily from robbing banks, I will help pass a law that keeps everyone — including myself — from doing so.

Does mutual agreement have to be unanimous? Certainly not. Only a majority is required to pass a coercive law. In some cases, however – remember Prohibition – a very large majority may be required. But to demand unanimity would be to abandon all hope of a workable democracy.

By what means will Americans achieve real population control? We don't know yet. Americans are too comfortable to try hard to find an answer; poor countries — more strongly motivated — may beat us to it. Whatever methods prove effective must be grounded in human nature, as China's method is. Individuals must be rewarded for actions that benefit primarily the group (which includes all individuals). In China, freedom from shame is an effective reward. In America, we shall probably have to offer monetary rewards for relative sterility. For instance, we might limit the dependency deduction on income tax to two children, or maybe only one. Or the government might give an allowance to every female between the ages of twelve and twenty so long as she does not get pregnant. Ingenuity is called for.

In the meantime, one large step toward population control is already necessary and may be possible: *We must bring immigration virtually to an end and do so soon.* In the absence of immigration, present trends in fertility, if continued unchanged, would bring America to zero population growth in about fifty years. If needed then, the government could offer incentives to parenthood, thus producing population stability. But all that is so far in the future that there is no profit in trying to spell out the details.

It is more important that we know what continued immigration will do to America. For perspective, let us begin with a few facts. First, the United States takes in more immigrants than all the other 180-odd nations combined. Second, the United States has the highest population growth rate in the developed, industrialized world. Third, immigration to the United States is increasing, not decreasing. Fourth, when immigration is added to "natural increase" (births minus deaths), the resultant population increase shows *no sign* of leveling off before we are impoverished. All worries about

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the dangers of a decline in population are vacuous.

In recent years, the United States has taken in over a million immigrants a year. Any suggestion that we might put an end to immigration is met with the anguished cry, "But we are a nation of immigrants!" *But so is every nation.* The natural history of a nation is simple: First, outsiders move into a land virtually vacant of people; the land fills up; congestion is felt; then, the residents close the gates. Unrestricted immigration characterizes a new nation; restrictions are the mark of a mature nation.

Someone asks, "But is not variety a necessary component of a healthy nation?" Before we answer hastily, we should note that Japan admits essentially *zero* immigrants per year — and what American would be so bold as to say that the Japanese are not doing very well in the modern world? They don't admit new bodies, but they do admit new ideas — from everywhere. With modern methods of communication, ideas no longer have to be brought into a country wrapped In human bodies. A wise nation admits just the ideas, leaving the bodies to be taken care of by the nations that produced them. This is the way of survival. Patriotism is rather unfashionable in our time, but can a conscientious humanist be contemptuous of the survival of the people with whom he or she associates daily?

Lastly, someone cries, "But the population problem is a *global* problem. We need global solutions!" Before panicking, let us look at the word *global*. Some problems are certainly global. Take acid rain. Take the greenhouse effect. Both cases involve the atmosphere, which is forever distributed and redistributed over the entire globe. Admittedly, it will be difficult to produce the global cooperation that is needed to solve such global problems, but no lesser solutions will work.

Now, let's look at the potholes in the streets. There are potholes all over the civilized world, but is that any reason for setting up a global pothole authority to fix our potholes? Would the pothole in your street be filled sooner if we globalized the problem?

The moral is surely obvious: *Never globalize a problem if it can possibly be solved locally.* It may be chic but it is not wise to tack the adjective *global* onto the names of problems that are merely widespread — for example, "global hunger," "global poverty," and the "global population problem."

We will make no progress with population problems, which are a root cause of both hunger and poverty, until we deglobalize them. Populations, like potholes, are produced locally and, unlike atmospheric pollution, remain local — unless some people are so unwise as to globalize them by permitting population excesses to migrate into the better-endowed countries. Marx's formula, "to each according to his needs," is a recipe for national suicide.

We are not faced with a *single* global population problem, but, rather, with about 180 separate national population problems. All population controls must be applied locally; local governments are the agents best prepared to choose local means. Means must fit local traditions. For one nation to attempt to impose its ethical principles on another is to violate national sovereignty and endanger international peace. The only legitimate demand that nations can make on one another is this: "Don't try to solve your population problem by exporting your excess people to us." All nations should take this position, and most do. Unfortunately, many Americans seem to believe that our nation can solve everyone else's population problems.

I have presented no more than a sketch of "the population problem" but this is surely enough to show that humanists have some hard thinking to do in the near future. Humanism, like science, is a self-correcting system. Humanists should not cling to error merely because it is traditional. With deeper insight into the nature of the world, humanists must reexamine their past attitudes toward rights in general, universal human rights, the primacy of the individual, coercion, the imperatives of the environment, human needs, generosity, and our duty toward posterity. The inquiry will be painful, but faith in the power of reason can give us strength to do what has to be done. ■

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The Tragedy of the Commons

by Garrett Hardin

At the end of a thoughtful article on the future of nuclear war, Wiesner and York[1] concluded that: "Both sides in the arms race are...confronted by the dilemma of steadily increasing military power and steadily decreasing national security. *It is our considered professional judgment that this dilemma has no technical solution.* If the great powers continue to look for solutions in the area of science and technology only, the result will be to worsen the situation."

I would like to focus your attention not on the subject of the article (national security in a nuclear world) but on the kind of conclusion they reached, namely that there is no technical solution to the problem. An implicit and almost universal assumption of discussions published in professional and semi-popular scientific journals is that the problem under discussion has a technical solution. A technical solution may be defined as one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality.

In our day (though not in earlier times) technical solutions are always welcome. Because of previous failures in prophecy, it takes courage to assert that a desired technical solution is not possible. Wiesner and York exhibited this courage; publishing in a science journal, they insisted that the solution to the problem was not to be found in the natural sciences. They cautiously qualified their statement with the phrase, "It is our considered professional judgment..." Whether they were right or not is not the concern of the present article. Rather, the concern here is with the important concept of a class of human problems which can be called "no technical solution problems" and, more specifically, with the identification and discussion of one of these.

It is easy to show that the class is not a null class. Recall the game of tick-tack-toe. Consider the problem, "How can I win the game of tick-tack-toe?" It is well known that I cannot, if I assume (in keeping with the conventions of game theory) that my opponent understands the game perfectly. Put another way, there is no "technical solution" to the problem. I can win only by giving radical meaning to the word "win." I can hit my opponent over the head; or I can drug him; or I can falsify the records. Every way in which I "win" involves, in some sense, an abandonment of the game, as we intuitively understand it. (I can also, of course, openly abandon the game — refuse to play it. This is what most adults do.)

The class of "No technical solution problems" has members. My thesis is that the "population problem," as conventionally conceived, is a member of this class. How it is conventionally conceived needs some comment. It is fair to say that most people who anguish over the population problem are trying to find a way to avoid the evils of over-population without relinquishing any of the privileges they now enjoy. They think that farming the seas or developing new strains of wheat will solve the problem — technologically. I try to show here

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that the solution they seek cannot be found. The population problem cannot be solved in a technical way, any more than can the problem of winning the game of tick-tack-toe.

What Shall We Maximize?

Population, as Malthus said, naturally tends to grow "geometrically" or, as we would now say, exponentially. In a finite world this means that the per capita share of the world's goods must steadily decrease. Is ours a finite world?

A fair defense can be put forward for the view that the world is infinite; or that we do not know that it is not. But, in terms of the practical problems that we must face in the next few generations with the foreseeable technology, it is clear that we will greatly increase human misery if we do not, during the immediate future, assume that the world available to the terrestrial human population is finite. "Space" is no escape.[2]

A finite world can support only a finite population; therefore, population growth must eventually equal zero. (The case of perpetual wide fluctuations above and below zero is a trivial variant that need not be discussed.) When this condition is met, what will be the situation of mankind? Specifically, can Bentham's goal of "the greatest good for the greatest number" be realized?

No — for two reasons, each sufficient by itself. The first is a theoretical one. It is not mathematically possible to maximize for two (or more) variables at the same time. This was clearly stated by von Neumann and Morgenstern,[3] but the principle is implicit in the theory of partial differential equations, dating back at least to D'Alembert (1717-1783).

The second reason springs directly from biological facts. To live, any organism must have a source of energy (for example, food). This energy is utilized for two purposes: mere maintenance and work. For man, maintenance of life requires about 1,600 kilo-calories a day ("maintenance calories"). Anything that he does over and above merely staying alive will be defined as work, and is supported by "work calories" which he takes in. Work calories are used not only for what we call work in common speech; they are also required for all forms of enjoyment, from swimming and automobile racing to playing music and writing poetry. If our goal is to maximize population it is obvious what we must do: We must make the work calories per person approach as close to zero as possible. No gourmet meals, no vacations, no sports, no music, no literature, no art ...I think that everyone will grant, without argument or proof, that maximizing population does not maximize goods. Bentham's goal is impossible.

In reaching this conclusion I have made the usual assumption that it is the acquisition of energy that is the problem. The appearance of atomic energy has led some to question this assumption. However, given an infinite source of energy, population growth still produces an inescapable problem. The problem of the acquisition of energy is replaced by the problem of its dissipation, as J. H. Fremlin has so wittily shown.[4] The arithmetic signs in analysis are, as it were, reversed; but Bentham's goal is still unobtainable.

"The optimum population is, then, less than the maximum. The difficulty of defining the optimum is enormous; so far as I know, no one has seriously tackled this problem."

The optimum population is, then, less than the maximum. The difficulty of defining the optimum is enormous; so far as I know, no one has seriously tackled this problem. Reaching an acceptable and stable solution will surely require more than one generation of hard analytical work — and much persuasion.

We want the maximum good per person; but what is good? To one person it is wilderness, to another it is ski lodges for thousands. To one it is estuaries to nourish ducks for hunters to shoot; to another it is factory land.

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Comparing one good with another is, we usually say, impossible because goods are incommensurable. Incommensurables cannot be compared.

Theoretically this may be true; but in real life incommensurables *are* commensurable. Only a criterion of judgment and a system of weighting are needed. In nature the criterion is survival. Is it better for a species to be small and hideable, or large and powerful? Natural selection commensurates the incommensurables. The compromise achieved depends on a natural weighting of the values of the variables.

"...by any reasonable standards, the most rapidly growing populations on earth today are (in general) the most miserable."

Man must imitate this process. There is no doubt that in fact he already does, but unconsciously. It is when the hidden decisions are made explicit that the arguments begin. The problem for the years ahead is to work out an acceptable theory of weighting. Synergistic effects, nonlinear variation, and difficulties in discounting the future make the intellectual problem difficult, but not (in principle) insoluble.

Has any cultural group solved this practical problem at the present time, even on an intuitive level? One simple fact proves that none has: There is no prosperous population in the world today that has, and has had for some time, a growth rate of zero. Any people that has intuitively identified its optimum point will soon reach it, after which its growth rate becomes and remains zero.

Of course, a positive growth rate might be taken as evidence that a population is below its optimum. However, by any reasonable standards, the most rapidly growing populations on earth today are (in general) the most miserable. This association (which need not be invariable) casts doubt on the optimistic assumption that the positive growth rate of a population is evidence that it has yet to reach its optimum.

We can make little progress in working toward optimum population size until we explicitly exorcize the spirit of Adam Smith in the field of practical demography. In economic affairs, *The Wealth of Nations* (1776) popularized the "invisible hand," the idea that an individual who "intends only his own gain" is, as it were, "led by an invisible hand to promote... the public interest."[5] Adam Smith did not assert that this was invariably true, and perhaps neither did any of his followers. But he contributed to a dominant tendency of thought that has ever since interfered with positive action based on rational analysis, namely, the tendency to assume that decisions reached individually will, in fact, be the best decisions for an entire society. If this assumption is correct it justifies the continuance of our present policy of laissez-faire in reproduction. If it is correct we can assume that men will control their individual fecundity so as to produce the optimum population. If the assumption is not correct, we need to reexamine our individual freedoms to see which ones are defensible.

Tragedy of Freedom in a Commons

The rebuttal to the invisible hand in population control can be found in a scenario first sketched in a little-known pamphlet[6] in 1833 by a mathematical amateur named William Forster Lloyd (1794-1852). We may well call it "the tragedy of the commons," using the word "tragedy" as the philosopher Whitehead used it[7]: "The essence of dramatic tragedy is not unhappiness. It resides in the solemnity of the remorseless working of things." He then goes on to say, "This inevitableness of destiny can only be illustrated in terms of human life by incidents which in fact involve unhappiness. For it is only by them that the futility of escape can be made evident in the drama."

The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably

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satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy.

As a rational being, each herdsman seeks to maximize his gain. Explicitly, or implicitly, more or less consciously, he asks: "What is the utility *to me* of adding one more animal to my herd?" This utility has one negative and one positive component.

1) The positive component is the function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1.

2) The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of -1.

Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another, and another ...But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit — in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.

"Education can counteract the natural tendency to do the wrong thing, but the inexorable succession of generations requires that the basis for this knowledge be constantly refreshed."

Some would say that this is a platitude. Would that it were! In a sense, it was learned thousands of years ago, but natural selection favors the forces of psychological denial.[8] The individual benefits as an individual from his ability to deny the truth even though society as a whole, of which he is a part, suffers. Education can counteract the natural tendency to do the wrong thing, but the inexorable succession of generations requires that the basis for this knowledge be constantly refreshed.

A simple incident that occurred a few years ago in Leominster, Massachusetts, shows how perishable the knowledge is. During the Christmas shopping season the parking meters downtown were covered with plastic bags that bore tags reading: "Do not open until after Christmas. Free parking courtesy of the mayor and city council." In other words, facing the prospect of an increased demand for already scarce space, the city fathers reinstituted the system of the commons. (Cynically, we suspect that they gained more votes than they lost in this retrogressive act.)

In an approximate way, the logic of the commons has been understood for a long time, perhaps since the discovery of agriculture or the invention of private property in real estate. But it is understood mostly only in special cases which are not sufficiently generalized. Even at this late date, cattlemen leasing national land on the western ranges demonstrate no more than an ambivalent understanding, in constantly pressuring federal authorities to increase the head count to the point where over-grazing produces erosion and weed dominance. Likewise, the oceans of the world continue to suffer from the survival of the philosophy of the commons. Maritime nations still respond automatically to the shibboleth of the "freedom of the seas." Professing to believe in the "inexhaustible resources of the oceans," they bring species after species of fish and whales closer to extinction.[9]

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The National Parks present another instance of the working out of the tragedy of the commons. At present, they are open to all, without limit. The values that visitors seek in the park are steadily eroded. Plainly, we must soon cease to treat the parks as a commons or they will be of no value to anyone.

What shall we do? We have several options. We might sell them off as private property. We might keep them as public property, but allocate the right to enter them. The allocation might be on the basis of wealth, by the use of an auction system. It might be on the basis of merit, as defined by some agreed-upon standards. It might be by lottery. Or it might be on a first-come, first-served basis, administered to long queues. These, I think, are all the reasonable possibilities. They are all objectionable. But we must choose — or acquiesce in the destruction of the commons that we call our National Parks.

Pollution

In a reverse way, the tragedy of the commons reappears in problems of pollution. Here it is not a question of taking something out of the commons, but of putting something in — sewage, or chemical, radioactive, and heat wastes into water; noxious and dangerous fumes into the air; and distracting and unpleasant advertising signs into the line of sight. The calculations of utility are much the same as before. The rational man finds that his share of the cost of the wastes he discharges into the commons is less than the cost of purifying his wastes before releasing them. Since this is true for everyone, we are locked into a system of "fouling our own nest," so long as we behave only as independent, rational, free-enterprisers.

"The pollution problem is a consequence of population. It did not much matter how a lonely American frontiersman disposed of his waste."

The tragedy of the commons as a food basket is averted by private property, or something formally like it. But the air and waters surrounding us cannot readily be fenced, and so the tragedy of the commons as a cesspool must be prevented by different means, by coercive laws or taxing devices that make it cheaper for the polluter to treat his pollutants than to discharge them untreated. We have not progressed as far with the solution of this problem as we have with the first. Indeed, our particular concept of private property, which deters us from exhausting the positive resources of the earth, favors pollution. The owner of a factory on the bank of a stream — whose property extends to the middle of the stream — often has difficulty seeing why it is not his natural right to muddy the waters flowing past his door. The law, always behind times, requires elaborate stitching and fitting to adapt it to this newly perceived aspect of the commons.

The pollution problem is a consequence of population. It did not much matter how a lonely American frontiersman disposed of his waste. "Flowing water purifies itself every ten miles," my grandfather used to say, and the myth was near enough to the truth when he was a boy, for there were not too many people. But as population became denser, the natural chemical and biological recycling processes became overloaded, calling for a redefinition of property rights.

How to Legislate Temperance?

Analysis of the pollution problem as a function of population density uncovers a not generally recognized principle of morality, namely: *The morality of an act is a function of the state of the system at the time it is performed.*[10] Using the commons as a cesspool does not harm the general public under frontier conditions, because there is no public; the same behavior in a metropolis is unbearable. A hundred and fifty years ago a plainsman could kill an American bison, cut out only the tongue for his dinner, and discard the rest of the animal. He was not in any important sense being wasteful.

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Today, with only a few bison left, we would be appalled at such behavior.

In passing, it is worth noting that the morality of an act cannot be determined from a photograph. One does not know whether a man killing an elephant or setting fire to the grassland is harming others until he knows the total system in which his act appears. "One picture is worth a thousand words," said an ancient Chinese, but it may take ten thousand words to validate it. It is as tempting to ecologists as it is to reformers in general to try to persuade others by way of the photographic shortcut. But the essence of an argument cannot be photographed: It must be presented rationally — in words.

That morality is system-sensitive escaped the attention of most codifiers of ethics in the past. "Thou shalt not..." is the form of traditional ethical directives which make no allowance for particular circumstances. The laws of our society follow the pattern of ancient ethics, and therefore are poorly suited to governing a complex, crowded, changeable world. Our epicyclic solution is to augment statutory law with administrative law. Since it is practically impossible to spell out all the conditions under which it is safe to burn trash in the back yard or to run an automobile without smog-control, by law we delegate the details to bureaus. The result is administrative law, which is rightly feared for an ancient reason — *Quis custodies ipsos custodes?* — "Who shall watch the watchers themselves?" John Adams said that we must have "a government of laws and not men." Bureau administrators, trying to evaluate the morality of acts in the total system, are singularly liable to corruption, producing a government by men, not laws.

Prohibition is easy to legislate (though not necessarily to enforce), but how do we legislate temperance? Experience indicates that it can be accomplished best through the mediation of administrative law. We limit possibilities unnecessarily if we suppose that the sentiment of *Quis custodiet* denies us the use of administrative law. We should rather retain the phrase as a perpetual reminder of fearful dangers we cannot avoid. The great challenge facing us now is to invent the corrective feedbacks that are needed to keep custodians honest. We must find ways to legitimate the needed authority of both the custodians and the corrective feedbacks.

Freedom to Breed Is Intolerable

The tragedy of the commons is involved in population problems in another way. In a world governed solely by the principle of "dog eat dog" — if indeed there ever was such a world — how many children a family had would not be a matter of public concern. Parents who bred too exuberantly would leave fewer descendants, not more, because they would be unable to care adequately for their children. David Lack and others have found that such a negative feedback demonstrably controls the fecundity of birds.[11] But men are not birds, and have not acted like them for millenniums, at least.

If each human family were dependent only on its own resources; *if* the children of improvident parents starved to death; *if*, thus, overbreeding brought its own "punishment" to the germ line — *then* there would be no public interest in controlling the breeding of families. But our society is deeply committed to the welfare state,[12] and hence is confronted with another aspect of the tragedy of the commons.

In a welfare state, how shall we deal with the family, the religion, the race, or the class (or indeed any distinguishable and cohesive group) that adopts overbreeding as a policy to secure its own aggrandizement?[13] To couple the concept of freedom to breed with the belief that everyone born has an equal right to the commons is to lock the world into a tragic course of action.

Unfortunately this is just the course of action that is being pursued by the United Nations. In late 1967, some 30 nations agreed to the following[14]:

> *The Universal Declaration of Human Rights describes the family as the natural and fundamental unit of society. It follows that any choice and decision with regard to the size of the family must irrevocably rest with the family itself, and cannot be made by anyone else.*

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It is painful to have to deny categorically the validity of this right; denying it, one feels as uncomfortable as a resident of Salem, Massachusetts, who denied the reality of witches in the seventeenth century. At the present time, in liberal quarters, something like a taboo acts to inhibit criticism of the United Nations. There is a feeling that the United Nations is "our last and best hope," that we shouldn't find fault with it; we shouldn't play into the hands of the archconservatives. However, let us not forget what Robert Louis Stevenson said: "The truth that is suppressed by friends is the readiest weapon of the enemy." If we love the truth we must openly deny the validity of the Universal Declaration of Human Rights, even though it is promoted by the United Nations. We should also join with Kingsley Davis[15] in attempting to get Planned Parenthood-World Population to see the error of its ways in embracing the same tragic ideal.

Conscience Is Self-Eliminating

It is a mistake to think that we can control the breeding of mankind in the long run by an appeal to conscience. Charles Galton Darwin made this point when he spoke on the centennial of the publication of his grandfather's great book. The argument is straightforward and Darwinian.

People vary. Confronted with appeals to limited breeding, some people will undoubtedly respond to the plea more than others. Those who have more children will produce a larger fraction of the next generation than those with more susceptible consciences. The difference will be accentuated, generation by generation.

In C. G. Darwin's words: "It may well be that it would take hundreds of generations for the progenitive instinct to develop in this way, but if it should do so, nature would have taken her revenge, and the variety *Homo contracipiens* would become extinct and would be replaced by the variety *Homo progenitivus*."[16]

The argument assumes that conscience or the desire for children (no matter which) is hereditary — but hereditary only in the most general formal sense. The result will be the same whether the attitude is transmitted through germ cells or exosomatically, to use A. J. Lotka's term. (If one denies the latter possibility as well as the former, then what's the point of education?) The argument here has been stated in the context of the population problem, but it applies equally well to any instance in which society appeals to an individual exploiting a commons to restrain himself for the general good — by means of his conscience. To make such an appeal is to set up a selective system that works toward the elimination of conscience from the race.

Pathogenic Effects of Conscience

The long-term effects of conscience should be enough to condemn it; but serious short-term disadvantages exist as well. If we ask a man who is exploiting a commons to desist "in the name of conscience," what are we saying to him? What does he hear? — not only at the moment but also in the wee hours of the night when, half asleep, he remembers not merely the words we used but also the nonverbal communication cues we gave him unawares? Sooner or later, consciously or subconsciously, he senses that he has received two communications, and that they are contradictory: (i) (intended communication) "If you don't do as we ask, we will openly condemn you for not acting like a responsible citizen"; (ii) (the unintended communication) "If you *do* behave as we ask, we will secretly condemn you for a simpleton who can be shamed into standing aside while the rest

"Those who have more children will produce a larger fraction of the next generation than those with more susceptible consciences. The difference will be accentuated, generation by generation."

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of us exploit the commons."

Every man then is caught in what Bateson has called a "double bind." Bateson and his co-workers have made a plausible case for viewing the double bind as an important causative factor in the genesis of schizophrenia.[17] The double bind may not always be so damaging, but it always endangers the mental health of anyone to whom it is applied. "A bad conscience," said Nietzsche, "is a kind of illness."

To conjure up a conscience in others is tempting to anyone who wishes to extend his control beyond the legal limits. Leaders at the highest level succumb to this temptation. Has any President during the past generation failed to call on labor unions to moderate voluntarily their demands for higher wages, or to steel companies to honor voluntary guidelines on prices? I can recall none. The rhetoric used on such occasions is designed to produce feelings of guilt in non-cooperators.

For centuries it was assumed without proof that guilt was a valuable, perhaps even an indispensable, ingredient of civilized life. Now, in this post-Freudian world, we doubt it.

Paul Goodman speaks from the modern point of view when he says: "No good has ever come from feeling guilty, neither intelligence, policy, nor compassion. The guilty do not pay attention to the object but only to themselves, and not even to their own interests, which might make sense, but to their anxieties."[18]

One does not have to be a professional psychiatrist to see the consequences of anxiety. We in the Western World are just emerging from a dreadful two-centuries-long Dark Ages of Eros that was sustained partly by prohibition laws, but perhaps more effectively by the anxiety-generating mechanisms of education. Alex Comfort has told the story well in *The Anxiety Makers*[19]; it is not a pretty one.

Since proof is difficult, we may even concede that the results of anxiety may sometimes, from certain points of view, be desirable. The larger question we should ask is whether, as a matter of policy, we should ever encourage the use of a technique the tendency (if not the intention) of which is psychologically pathogenic. We hear much talk these days of responsible parenthood; the coupled words are incorporated into the titles of some organizations devoted to birth control. Some people have proposed massive propaganda campaigns to instill responsibility into the nation's (or the world's) breeders. But what is the meaning of the word "responsibility" in this context? Is it not merely a synonym for the word "conscience?" When we use the word "responsibility" in the absence of substantial sanctions, are we not trying to browbeat a free man in a commons into acting against his own interest? Responsibility is a verbal counterfeit for a substantial *quid pro quo*. It is an attempt to get something for nothing.

If the word "responsibility" is to be used at all, I suggest that it be in the sense Charles Frankel uses it.[20] "Responsibility," says this philosopher, "is the product of definite social arrangements." Notice that Frankel calls for social arrangements — not propaganda.

Mutual Coercion Mutually Agreed Upon

The social arrangements that produce responsibility are arrangements that create coercion, of some sort. Consider bank-robbing. The man who takes money from a bank acts as if the bank were a commons. How do we prevent such action? Certainly not by trying to control his behavior solely by a verbal appeal to his sense of responsibility. Rather than rely on propaganda we follow Frankel's lead and insist that a bank is not a commons; we seek the definite social arrangements that will keep it from becoming a commons. That we will thereby infringe on the freedom of would-be robbers we neither deny nor regret.

The morality of bank-robbing is particularly easy to understand because we accept complete prohibition of this activity. We are willing to say, "Thou shalt not rob banks," without providing for exceptions. But temperance also can be created by coercion. Taxing is a good coercive device. To keep downtown shoppers temperate in their use of parking space we introduce parking meters for short periods, and traffic fines for longer ones. We need not actually forbid a citizen to park as long as he wants to; we need merely to make it

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increasingly expensive for him to do so. Not prohibition, but carefully biased options are what we offer him. A Madison Avenue man might call this persuasion; I prefer the greater candor of the word coercion.

Coercion is a dirty word to most liberals now, but it need not forever be so. As with the four-letter words, its dirtiness can be cleansed away by exposure to the light, by saying it over and over without apology or embarrassment. To many, the word coercion implies arbitrary decisions of distant and irresponsible bureaucrats; but this is not a necessary part of its meaning. The only kind of coercion I recommend is mutual coercion, mutually agreed upon by the majority of the people affected.

To say that we mutually agree to coercion is not to say that we are required to enjoy it, or even to pretend we enjoy it. Who enjoys taxes? We all grumble about them. But we accept compulsory taxes because we recognize that voluntary taxes would favor the conscienceless. We institute and (grumblingly) support taxes and other coercive devices to escape the horrors of the commons.

An alternative to the commons need not be perfectly just to be preferable. With real estate and other material goods, the alternative we have chosen is the institution of private property coupled with legal inheritance. Is this system perfectly just? As a genetically trained biologist I deny that it is. It seems to me that, if there are to be differences in individual inheritance, legal possession should be perfectly correlated with biological inheritance — that those who are biologically more fit to be the custodians of property and power should legally inherit more. But genetic recombination continually makes a mockery of the doctrine of "like father, like son" implicit in our laws of legal inheritance. An idiot can inherit millions, and a trust fund can keep his estate intact. We must admit that our legal system of private property plus inheritance is unjust — but we put up with it because we are not convinced, at the moment, that anyone has invented a better system. The alternative of the commons is too horrifying to contemplate. Injustice is preferable to total ruin.

It is one of the peculiarities of the warfare between reform and the status quo that it is thoughtlessly governed by a double standard. Whenever a reform measure is proposed it is often defeated when its opponents triumphantly discover a flaw in it. As Kingsley Davis has pointed out,[21] worshipers of the status quo sometimes imply that no reform is possible without unanimous agreement, an implication contrary to historical fact. As nearly as I can make out, automatic rejection of proposed reforms is based on one of two unconscious assumptions: (i) that the status quo is perfect; or (ii) that the choice we face is between reform and no action; if the proposed reform is imperfect, we presumably should take no action at all, while we wait for a perfect proposal.

But we can never do nothing. That which we have done for thousands of years is also action. It also produces evils. Once we are aware that the status quo is action, we can then compare its discoverable advantages and disadvantages with the predicted advantages and disadvantages of the proposed reform, discounting as best we can for the lack of experience. On the basis of such a comparison, we can make a rational decision which will not involve the unworkable assumption that only perfect systems are tolerable.

Recognition of Necessity

Perhaps the simplest summary of this analysis of man's population problems is this: The commons, if justifiable at all, is justifiable only under conditions of low-population density. As the human population has increased, the commons has had to be abandoned in one aspect after another.

First we abandoned the commons in food gathering, enclosing farm land and restricting pastures and hunting and fishing areas. These restrictions are still not complete throughout the world.

Somewhat later we saw that the commons as a place for waste disposal would have to be abandoned. Restrictions on the disposal of domestic sewage are widely accepted in the Western World; we are still struggling to close the commons to pollution by automobiles, factories, insecticide

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sprayers, fertilizing operations, and atomic energy installations.

In a still more embryonic state is our recognition of the evils of the commons in matters of pleasure. There is almost no restriction on the propagation of sound waves in the public medium. The shopping public is assaulted with mindless music, without its consent. Our government is paying out billions of dollars to create supersonic transport which will disturb fifty thousand people for every one person who is whisked from coast to coast three hours faster. Advertisers muddy the airwaves of radio and television and pollute the view of travelers. We are a long way from outlawing the commons in matters of pleasure. Is this because our Puritan inheritance makes us view pleasure as something of a sin, and pain (that is, the pollution of advertising) as the sign of virtue?

Every new enclosure of the commons involves the infringement of somebody's personal liberty. Infringements made in the distant past are accepted because no contemporary complains of a loss. It is the newly proposed infringements that we vigorously oppose; cries of "rights" and "freedom" fill the air. But what does "freedom" mean? When men mutually agreed to pass laws against robbing, mankind became more free, not less so. Individuals locked into the logic of the commons are free only to bring on universal ruin; once they see the necessity of mutual coercion, they become free to pursue other goals. I believe it was Hegel who said, "Freedom is the recognition of necessity."

The most important aspect of necessity that we must now recognize, is the necessity of abandoning the commons in breeding. No technical solution can rescue us from the misery of overpopulation. Freedom to breed will bring ruin to all. At the moment, to avoid hard decisions many of us are tempted to propagandize for conscience and responsible parenthood. The temptation must be resisted, because an appeal to independently acting consciences selects for the disappearance of all conscience in the long run, and an increase in anxiety in the short.

The only way we can preserve and nurture other and more precious freedoms is by relinquishing the freedom to breed, and that very soon. "Freedom is the recognition of necessity" — and it is the role of education to reveal to all the necessity of abandoning the freedom to breed. Only so, can we put an end to this aspect of the tragedy of the commons. ■

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Living on a Lifeboat

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by Garrett Hardin

Susanne Langer (1942) has shown that it is probably impossible to approach an unsolved problem save through the door of metaphor. Later, attempting to meet the demands of rigor, we may achieve some success in cleansing theory of metaphor, though our success is limited if we are unable to avoid using common language, which is shot through and through with fossil metaphors. (I count no less than five in the preceding two sentences.)

Since metaphorical thinking is inescapable it is pointless merely to weep about our human limitations. We must learn to live with them, to understand them, and to control them. "All of us," said George Eliot in *Middlemarch*, "get our thoughts entangled in metaphors, and act fatally on the strength of them." To avoid unconscious suicide we are well advised to pit one metaphor against another. From the interplay of competitive metaphors, thoroughly developed, we may come closer to metaphor-free solutions to our problems.

No generation has viewed the problem of the survival of the human species as seriously as we have. Inevitably, we have entered this world of concern through the door of metaphor. Environmentalists have emphasized the image of the earth as a spaceship — Spaceship Earth. Kenneth Boulding (1966) is the principal architect of this metaphor. It is time, he says, that we replace the wasteful "cowboy economy" of the past with the frugal "spaceship economy" required for continued survival in the limited world we now see ours to be. The metaphor is notably useful in justifying pollution control measures.

Unfortunately, the image of a spaceship is also used to promote measures that are suicidal. One of these is a generous immigration policy, which is only a particular instance of a class of policies that are in error because they lead to the tragedy of the commons (Hardin 1968). These suicidal policies are attractive because they mesh with what we unthinkingly take to be the ideals of "the best people." What is missing in the idealistic view is an insistence that rights and responsibilities must go together. The "generous" attitude of all too many people results in asserting inalienable rights while ignoring or denying matching responsibilities.

For the metaphor of a spaceship to be correct, the aggregate of people on board would have to be under unitary sovereign control (Ophuls 1974). A true ship always has a captain. It is conceivable that a ship could be run by a committee. But it could not possibly survive if its course were determined by bickering tribes that claimed rights without responsibilities.

What about Spaceship Earth? It certainly has no captain, and no executive committee. The United Nations is a toothless tiger, because the signatories of its charter wanted it that way. The spaceship metaphor is used only to justify spaceship demands on common resources without acknowledging corresponding spaceship responsibilities.

An understandable fear of decisive action leads people to embrace "incrementalism" — moving toward reform by tiny stages. As we shall see, this strategy is counterproductive in the area discussed here if it means accepting rights before responsibilities. Where human survival is at stake, the acceptance of responsibilities is a precondition to the acceptance of rights, if the two cannot be introduced simultaneously.

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Lifeboat Ethics

Before taking up certain substantive issues let us look at an alternative metaphor, that of a lifeboat. In developing some relevant examples the following numerical values are assumed. Approximately two-thirds of the world is desperately poor, and only one-third is comparatively rich. The people in poor countries have an average per capita GNP (Gross National Product) of about $200 per year, the rich, of about $3,000. (For the United States it is nearly $5,000 per year.) Metaphorically, each rich nation amounts to a lifeboat full of comparatively rich people. The poor of the world are in other, much more crowded, lifeboats. Continuously, so to speak, the poor fall out of their lifeboats and swim for a while in the water outside, hoping to be admitted to a rich lifeboat, or in some other way to benefit from the "goodies" on board. What should the passengers on a rich lifeboat do? This is the central problem of "the ethics of a lifeboat."

First we must acknowledge that each lifeboat is effectively limited in capacity. The land of every nation has a limited carrying capacity. The exact limit is a matter for argument, but the energy crunch is convincing more people every day that we have already exceeded the carrying capacity of the land. We have been living on "capital" — stored petroleum and coal — and soon we must live on income alone.

Let us look at only one lifeboat — ours. The ethical problem is the same for all, and is as follows. Here we sit, say fifty people in a lifeboat. To be generous, let us assume our boat has a capacity of ten more, making sixty. (This, however, is to violate the engineering principle of the "safety factor." A new plant disease or a bad change in the weather may decimate our population if we don't preserve some excess capacity as a safety factor.)

"...the energy crunch is convincing more people every day that we have already exceeded the carrying capacity of the land."

The fifty of us in the lifeboat see a hundred others swimming in the water outside, asking for admission to the boat, or for handouts. How shall we respond to their calls? There are several possibilities.

One. We may be tempted to try to live by the Christian ideal of being "our brother's keeper," or by the Marxian ideal (Marx 1875) of "from each according to his abilities, to each according to his needs." Since the needs of all are the same, we take all the needy into our boat, making a total of one hundred and fifty in a boat with a capacity of sixty. The boat is swamped, and everyone drowns. Complete justice, complete catastrophe.

Two. Since the boat has an unused excess capacity of ten, we admit just ten more to it. This has the disadvantage of getting rid of the safety factor, for which action we will sooner or later pay dearly. Moreover, *which* ten do we let in? "First come, first served?" The best ten? The neediest ten? How do we *discriminate*? And what do we say to the ninety who are excluded?

Three. Admit no more to the boat and preserve the small safety factor. Survival of the people in the lifeboat is then possible (though we shall have to be on our guard against boarding parties).

The last solution is abhorrent to many people. It is unjust, they say. Let us grant that it is.

"I feel guilty about my good luck," say some. The reply to this is simple: *Get out and yield your place to others.* Such a selfless action might satisfy the conscience of those who are addicted to guilt but it would not change the ethics of the lifeboat. The needy person to whom a guilt addict yields his place will not himself feel guilty about his sudden good luck. (If he did he would not climb aboard.) The net result of conscience-stricken people relinquishing their unjustly held positions is the elimination of their kind of conscience from the lifeboat. The lifeboat, as it were, purifies itself of guilt. The ethics of the lifeboat persist, unchanged by such momentary aberrations.

This then is the basic metaphor within which we must work out

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our solutions. Let us enrich the image step by step with substantive additions from the real world.

Reproduction

The harsh characteristics of lifeboat ethics are heightened by reproduction, particularly by reproductive differences. The people inside the lifeboats of the wealthy nations are doubling in numbers every eighty-seven years; those outside are doubling every thirty-five years, on the average. And the relative difference in prosperity is becoming greater.

Let us, for a while, think primarily of the U.S. lifeboat. As of 1973, the United States had a population of 210 million people who were increasing by 0.8 percent per year, that is, doubling in number every eighty-seven years.

Although the citizens of rich nations are outnumbered two to one by the poor, let us imagine an equal number of poor people outside our lifeboat — a mere 210 million poor people reproducing at a quite different rate. If we imagine these to be the combined populations of Colombia, Venezuela, Ecuador, Morocco, Thailand, Pakistan, and the Philippines, the average rate of increase of the people "outside" is a 3.3 percent per year. The doubling time of this population is twenty-one years.

Suppose that all these countries, and the United States, agreed to live by the Marxian ideal, "to each according to his needs," the ideal of most Christians as well. Needs, of course, are determined by population size, which is affected by reproduction. Every nation regards its rate of reproduction as a sovereign right. If our lifeboat were big enough in the beginning it might be possible to live *for a while* by Christian-Marxian ideals. *Might.*

Initially, in the model given, the ratio of non-Americans to Americans would be one to one. But consider what the ratio would be eighty-seven years later. By this time Americans would have doubled to a population of 420 million. The other group (doubling every twenty-one years) would now have swollen to 3,540 million. Each American would have more than eight people to share with. How could the lifeboat possibly keep afloat?

All this involves extrapolation of current trends into the future and is consequently suspect. Trends may change. Granted, but the change will not necessarily be favorable. If, as seems likely, the rate of population increase falls faster in the ethnic group presently inside the lifeboat than it does among those now outside, the future will turn out to be even worse than mathematics predicts, and sharing will be even more suicidal.

Ruin in the Commons

The fundamental error of the sharing ethics is that it leads to the tragedy of the commons. Under a system of private property the man (or group of men) who own property recognize their responsibility to care for it, for if they don't they will eventually suffer. A farmer, for instance, if he is intelligent, will allow no more cattle in a pasture than its carrying capacity justifies. If he overloads the pasture, weeds take over, erosion sets in, and the owner loses in the long run.

But if a pasture is run as a commons open to all, the right of each to use it is not matched by an operational responsibility to take care of it. It is no use asking independent herdsmen in a commons to act responsibly, for they dare not. The considerate herdsman who refrains from overloading the commons suffers more than a selfish one who says his needs are greater. (As Leo Durocher says, "Nice guys finish last.") Christian-Marxian idealism is counterproductive. That it *sounds* nice is no excuse. With distribution systems, as with individual morality, good intentions are no substitute for good performance.

A social system is stable only if it is insensitive to errors. To the Christian-Marxian idealist a selfish person is a sort of "error." Prosperity in the system of the commons cannot survive errors. If *everyone* would only restrain himself, all would be well; but it takes *only one less than everyone* to ruin a system of voluntary restraint. In a crowded world of less than perfect human beings — and we will never know any other — mutual ruin is inevitable in the commons. This is the core of the tragedy of the commons.

One of the major tasks of education today is to create such an awareness of the dangers of the

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commons that people will be able to recognize its many varieties, however disguised. There is pollution of the air and water because these media are treated as commons. Further growth of population and growth in the per capita conversion of natural resources into pollutants require that the system of the commons be modified or abandoned in the disposal of "externalities."

The fish populations of the oceans are exploited as commons, and ruin lies ahead. No technological invention can prevent this fate; in fact, all improvements in the art of fishing merely hasten the day of complete ruin. Only the replacement of the system of the commons with a responsible system can save oceanic fisheries.

The management of western rangelands, though nominally rational, is in fact (under the steady pressure of cattle ranchers) often merely a government-sanctioned system of the commons, drifting toward ultimate ruin for both the rangelands and the residual enterprisers.

World Food Banks

In the international arena we have recently heard a proposal to create a new commons, namely an international depository of food reserves to which nations will contribute according to their abilities, and from which nations may draw according to their needs. Nobel laureate Norman Borlaug has lent the prestige of his name to this proposal.

A world food bank appeals powerfully to our humanitarian impulses. We remember John Donne's celebrated line, "Any man's death diminishes me." But before we rush out to see for whom the bell tolls let us recognize where the greatest political push for international granaries comes from, lest we be disillusioned later. Our experience with Public Law 480 clearly reveals the answer. This was the law that moved billions of dollars worth of U.S. grain to food-short, population-long countries during the past two decades. When P.L. 480 first came into being, a headline in the business magazine *Forbes* (Paddock and Paddock 1970) revealed the power behind it: "Feeding the World's Hungry Millions: How It Will Mean Billions for U.S. Business."

And indeed it did. In the years 1960 to 1970 a total of $7.9 billion was spent on the "Food for Peace" program, as P.L. 480 was called. During the years 1948 to 1970 an additional $49.9 billion were extracted from American taxpayers to pay for other economic aid programs, some of which went for food and food-producing machinery. (This figure does *not* include military aid.) That P.L. 480 was a give-away program was concealed. Recipient countries went through the motions of paying for P.L. 480 food — with IOUs. In December 1973 the charade was brought to an end as far as India was concerned when the United States "forgave" India's $3.2 billon debt (Anonymous 1974). Public announcement of the cancellation of the debt was delayed for two months; one wonders why.

"*Famine — 1974*" (Paddock and Paddock 1970) is one of the few publications that points out the commercial roots of this humanitarian attempt. Though all U.S. taxpayers lost by P.L. 480, special interest groups gained handsomely. Farmers benefited because they were not asked to contribute the grain — it was bought from them by the taxpayers. Besides the direct benefit there was the indirect effect of increasing demand and thus raising prices of farm products generally. The manufacturers of farm machinery, fertilizers, and pesticides benefited by the farmers' extra efforts to grow more food. Grain elevators profited from storing the grain for varying lengths of time. Railroads made money hauling it to port, and shipping lines by carrying it overseas. Moreover, once the machinery for P.L. 480 was established, an immense bureaucracy had a vested interest in its continuance regardless of its merits.

Very little was ever heard of these selfish interests when P.L. 480 was defended in public. The emphasis was always on its humanitarian effects. The combination of multiple and relatively silent selfish interests with highly vocal humanitarian apologists constitutes a powerful lobby for extracting money from taxpayers. Foreign aid has become a habit that can apparently survive in the absence of any known justification. A news commentator in a weekly magazine (*Lansner 1974*), after

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exhaustively going over all the conventional arguments for foreign aid, self-interest, social justice, political advantage, and charity, and concluding that none of the known arguments really held water, concluded: "So the search continues for some logically compelling reasons for giving aid..." In other words, *Act now, Justify later* — if ever. (Apparently a quarter of a century is too short a time to find the justification for expending several billion dollars yearly.)

The search for a rational justification can be short-circuited by interjecting the word "emergency." Borlaug uses this word. We need to look sharply at it. What is an "emergency?" It is surely something like an accident, which is correctly defined as "an event that is certain to happen, though with a low frequency" (Hardin 1972a). A well-run organization prepares for everything that is certain, including accidents and emergencies. It budget for them. It saves for them. It expects them — and mature decision-makers do not waste time complaining about accidents when they occur.

What happens if some organizations budget for emergencies and other do not? If each organization is solely responsible for its own well-being, poorly managed ones will suffer. But they should be able to learn from experience. They have a chance to mend their ways and learn to budget for infrequent but certain emergencies. The weather, for instance, always varies and periodic crop failures are certain. A wise and competent government saves out of the production of the good years in anticipation of bad years that are sure to come. This is not a new idea. The Bible tells us that Joseph taught this policy to Pharaoh in Egypt more than two thousand years ago. Yet it is literally true that the vast majority of the governments of the world today have no such policy. They lack either the wisdom or the competence, or both. Far more difficult than the transfer of wealth from one country to another is the transfer of wisdom between sovereign powers or between generations.

"But it isn't their fault! How can we blame the poor people who are caught in an emergency? Why must we punish them?" The concepts of blame and punishment are irrelevant. The question is, what are the operational consequences of establishing a world food bank? If it is open to every country every time a need develops, slovenly rulers will not be motivated to take Joseph's advice. Why should they? Others will bail them out whenever they are in trouble.

Some countries will make deposits in the world food bank and others will withdraw from it: There will be almost no overlap. Calling such a depository-transfer unit a "bank" is stretching the metaphor of *bank* beyond its elastic limits. The proposers, of course, never call attention to the metaphorical nature of the word they use.

The Ratchet Effect

An "international food bank" is really, then, not a true bank but a disguised one-way transfer device for moving wealth from rich countries to poor. In the absence of such a bank, in a world inhabited by individually responsible sovereign nations, the population of each nation would repeatedly go through a cycle of the sort shown in Figure 1. P_2 is greater than P_1, either in absolute numbers or because a deterioration of the food supply has removed the safety factor and produced a dangerously low ratio of resources to population. P_2 may be said to represent a state of overpopulation, which becomes obvious upon the appearance of an "accident," e.g., a crop failure. If the "emergency is not met by outside help, the population drops back to the "normal" level — the "carrying capacity" of the environment — or even below. In the absence of population control by a sovereign, sooner or later the population grows to P_2 again and the cycle repeats. The long-term population curve (Hardin 1966) is an irregularly fluctuating one, equilibrating more or less about the carrying capacity.

A demographic cycle of this sort obviously involves great suffering in the restrictive phase, but such a cycle is normal to any independent country with inadequate population control. The third century theologian Tertullian (Hardin 1969a) expressed what must have been the recognition of many wise men when he wrote: "The scourges of pestilence, famine, wars, and

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earthquakes have come to be regarded as a blessing to overcrowded nations, since they serve to prune away the luxuriant growth of the human race."

Only under a strong and farsighted sovereign — which theoretically could be the people themselves, democratically organized — can a population equilibrate at some set point below the carrying capacity, thus avoiding the pains normally caused by periodic and unavoidable disasters. For this happy state to be achieved it is necessary that those in power be able to contemplate with equanimity the "waste" of surplus food in times of bountiful harvests. It is essential that those in power resist the temptation to convert extra food into extra babies. On the public relations level it is necessary that the phrase "surplus food" be replaced by "safety factor."

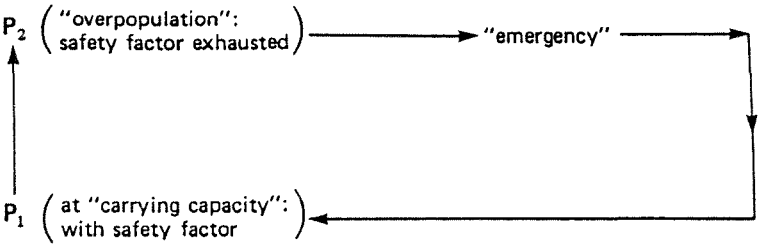

Fig. 1. The population cycle of a nation that has no effective, conscious population control, and which receives no aid from the outside. P_2 is greater than P_1.

But wise sovereigns seem not to exist in the poor world today. The most anguishing problems are created by poor countries that are governed by rulers insufficiently wise and powerful. If such countries can draw on a world food bank in times of "emergency," the population cycle of Figure 1 will be replaced by the population *excalator* of Figure 2. The input of food from a food bank acts as the pawl of a ratchet, preventing the population from retracing its steps to a lower level. Reproduction pushes the population upward, inputs from the World Bank prevent its moving downward. Population size escalates, as does the absolute magnitude of "accidents" and "emergencies." The process is brought to an end only by the total collapse of the whole system, producing a catastrophe of scarcely imaginable proportions.

Such are the implications of the well-meant sharing of food in a world of irresponsible reproduction.

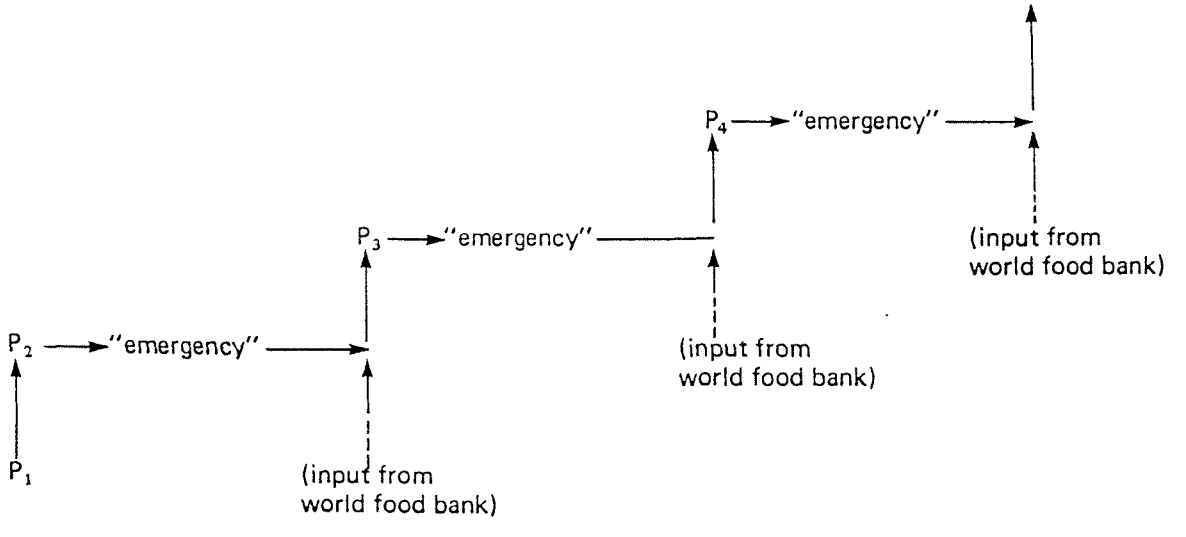

Fig. 2. The population escalator. Note that input from a world food bank acts like the pawl of a ratchet, preventing the normal population cycle shown in Figure 1 from being completed. P_{n+1} is greater than P_n, and the absolute magnitude of the "emergencies" escalates. Ultimately the entire system crashes. The crash is not shown, and few can imagine it.

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I think we need a new word for systems like this. The adjective "melioristic" is applied to systems that produce continual improvement; the English word is derived from the Latin *meliorare*, to become or make better. Parallel with this it would be useful to bring in the word "pejoristic" (from the Latin *pejorare*, to become or make worse.) This word can be applied to those systems which, by their very nature, can be relied upon to make matters worse. A world food bank coupled with sovereign state irresponsibility in reproduction is an example of a pejoristic system.

This pejoristic system creates an unacknowledged commons. People have more motivation to draw from than to add to the common store. The license to make such withdrawals diminishes whatever motivation poor countries might otherwise have to control their populations. Under the guidance of this ratchet, wealth can be steadily moved in one direction only, from the slowly breeding rich to the rapidly breeding poor, the process finally coming to a halt only when all countries are equally and miserably poor.

All this is terribly obvious once we are acutely aware of the pervasiveness and danger of the commons. But many people still lack this awareness and the euphoria of the "benign demographic transition" (Hardin 1973) interferes with the realistic appraisal of pejoristic mechanisms. As concerns public policy, the deductions drawn from the benign demographic transition are these:

1. If the per capita GNP rises the birth rate will fall; hence, the rate of population increase will fall, ultimately producing ZPG (Zero Population Growth).
2. The long-term trend all over the world (including the poor countries) is of a rising per capita GNP (for which no limit is seen).
3. Therefore, all political interference in population matters is unnecessary; all we need to do is foster economic "development" — *note the metaphor* — and population problems will solve themselves.

Those who believe in the benign demographic transition dismiss the pejoristic mechanism of Figure 2 in the belief that each input of food from the world outside fosters development within a poor country thus resulting in a drop in the rate of population increase. Foreign aid has proceeded on this assumption for more than two decades. Unfortunately, it has produced no indubitable instance of the asserted effect. It has, however, produced a library of excuses. The air is filled with plaintive calls for more massive foreign aid appropriations so that the hypothetical melioristic process can get started.

The doctrine of demographic laissez-faire implicit in the hypothesis of the benign demographic transition is immensely attractive. Unfortunately there is more evidence against the melioristic system than there is for it (Davis 1963). On the historical side there are many counter examples. The rise in per capita GNP in France and Ireland during the past century has been accompanied by a rise in population growth. In the twenty years following the Second World War the same positive correlation was noted almost everywhere in the world. Never in world history before 1950 did the worldwide population growth reach one percent per annum. Now the average population growth is over two percent and shows no signs of slackening.

On the theoretical side, the denial of the pejoristic scheme of Figure 2 probably springs from the hidden acceptance of the "cowboy economy" that Boulding castigated. Those who recognize the limitations of a spaceship, if they are unable to achieve population control at a safe and comfortable level, accept the necessity of the corrective feedback of the population cycle shown in Figure 1. No one who knew in his bones that he was living on a true spaceship would countenance political support of the population escalator shown in Figure 2.

Eco-Destruction Via the Green Revolution

The demoralizing effect of charity on the recipient has long been known. "Give a man a fish and he will eat for a day; teach him how to fish and he will eat for the rest of his days." So runs an ancient Chinese proverb. Acting on this advice the Rockefeller and Ford Foundations have financed a multipronged program for

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improving agriculture in the hungry nations. The result, known as the "Green Revolution," has been quite remarkable. "Miracle wheat" and "miracle rice" are splendid technological achievements in the realm of plant genetics.

Whether or not the Green Revolution can increase food production is doubtful (Harris 1972, Paddock 1970, Wilkes 1972), but in any event not particularly important. What is missing in this great and well-meaning humanitarian effort is a firm grasp of fundamentals. Considering the importance of the Rockefeller Foundation in this effort it is ironic that the late Alan Gregg, a much-respected vice-president of the Foundation, strongly expressed his doubts of the wisdom of all attempts to increase food production some two decades ago. (This was before Bourlaug's work — supported by Rockefeller — had resulted in the development of "miracle wheat.") Gregg (1955) likened the growth and spreading of humanity over the surface of the earth to the metastasis of cancer in the human body, wryly remarking that "Cancerous growths demand food; but, as far as I know, they have never been cured by getting it."

"Man does not live by bread alone" — the scriptural statement has a rich meaning even in the material realm. Every human being born constitutes a draft on all aspects of the environment — food, air, water, unspoiled scenery, occasional and optional solitude, beaches, contact with wild animals, fishing and hunting; the list is long and incompletely known. Food can, perhaps, be significantly increased, but what about clean beaches, unspoiled forests, and solitude? If we satisfy the need for food in a growing population we necessarily decrease the supply of other goods, and thereby increase the difficulty of equitably allocating scarce goods (Hardin 1969b, 1972b).

"Observant critics have shown how much harm we wealthy nations have already done to poor nations through our well-intentioned but misguided attempts to help them."

The present population of India is 600 million, and it is increasing by 15 million per year. The environmental load of this population is already great. The forests of India are only a small fraction of what they were three centuries ago. Soil erosion, floods, and the psychological costs of crowding are serious. Every one of the net 15 million lives added each year stresses the Indian environment more severely. *Every life saved this year in a poor country diminishes the quality of life for subsequent generations.*

Observant critics have shown how much harm we wealthy nations have already done to poor nations through our well-intentioned but misguided attempts to help them (Paddock and Paddock 1973). Particularly reprehensible is our failure to carry out post-audits of these attempts (Farvar and Milton 1972). Thus have we shielded our tender consciences from knowledge of the harm we have done. Must we Americans continue to fail to monitor the consequences of our external "do-gooding?" If, for instance, we thoughtlessly make it possible for the present 600 million Indians to swell to 1,200 million by the year 2001, as their present growth rate promises, will posterity in India thank *us* for facilitating an even greater destruction of *their* environment? Are good intentions ever a sufficient excuse for bad consequences?

Immigration Creates A Commons

I come now to the final example of a commons in action, one for which the public is least prepared for rational discussion. The topic is at present enveloped by a great silence which reminds me of a comment made by Sherlock Holmes in A. Conan Doyle's story "Silver Blaze." Inspector Gregory had asked, "Is there any point to which you would wish to draw my attention?" To this Holmes

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responded:

> *"To the curious incident of the dog in the nighttime."*
>
> *"The dog did nothing in the nighttime," said the Inspector.*
>
> *"That was the curious incident," remarked Sherlock Holmes.*

By asking himself what would repress the normal barking instinct of a watchdog, Holmes realized that it must be the dog's recognition of his master as the criminal trespasser. In a similar way we should ask ourselves what repression keeps us from discussing something as important as immigration.

It cannot be that immigration is numerically of no consequence. Our government acknowledges a *net* inflow of 400,000 a year. Hard data are understandably lacking on the extent of illegal entries, but a not implausible figure is 600,000 per year (Buchanan 1973). The natural increase of the resident population is now about 1.7 million per year. This means that the yearly gain from immigration is at least nineteen percent, and may be thirty-seven percent, of the total increase. It is quite conceivable that educational campaigns like that of Zero Population Growth, Inc., coupled with adverse social and economic factors — inflation, housing shortage, depression, and loss of confidence in national leaders — may lower the fertility of American women to a point at which all of the yearly increase in population would be accounted for by immigration. Should we not at least ask if that is what we want? How curious it is that we so seldom discuss immigration these days!

Curious, but understandable, as one finds out the moment he publicly questions the wisdom of the status quo in immigration. He who does so is promptly charged with *isolationism, bigotry, prejudice, ethnocentrism, chauvinism, and selfishness.* These are hard accusations to bear. It is pleasanter to talk about other matters, leaving immigration policy to wallow in the crosscurrents of special interests that take no account of the good of the whole, *or of the interests of posterity.*

We Americans have a bad conscience because of things we said in the past about immigrants. Two generations ago the popular press was rife with references to *Dagos, Wops, Polacks, Japs, Chinks, and Krauts*, all pejorative terms which failed to acknowledge our indebtedness to Goya, Leonardo, Copernicus, Hiroshige, Confucius, and Bach. Because the implied inferiority of foreigners was *then* the justification for keeping them out, it is *now* thoughtlessly assumed that restrictive policies can only be based on the assumption of immigrant inferiority. *This is not so.*

Existing immigration laws exclude idiots and known criminals; future laws will almost certainly continue this policy. But should we also consider the quality of the average immigrant, as compared with the quality of the average resident? Perhaps we should, perhaps we shouldn't. (What is "quality" anyway?) But the quality issue is not our concern here.

From this point on, *it will be assumed that immigrants and native-born citizens are of exactly equal quality,* however quality may be defined. The focus is only on quantity. The conclusions reached depend on nothing else, so all charges of ethnocentrism are irrelevant.

"It cannot be that immigration is numerically of no consequence. Our government acknowledges a net inflow of 400,000 a year. ...A not implausible figure is 600,000 a year."

World food banks move food to the people, thus facilitating the exhaustion of the environment of the poor. By contrast, unrestricted immigration moves people to the food, thus speeding up the destruction of the environment in rich countries. Why poor people should want to make this transfer is no mystery; but why should rich hosts encourage it? This transfer, like the reverse one, is supported

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by both selfish interests and humanitarian impulses.

The principal selfish interest in unimpeded immigration is easy to identify: It is the interest of the employers of cheap labor, particularly that needed for degrading jobs. We have been deceived about the forces of history by the lines of Emma Lazarus inscribed [inside the entrance to] the Statue of Liberty:

Give me your tired, your poor
Your huddled masses
yearning to breathe free,
The wretched refuse of your
teeming shore,
Send these, the homeless,
tempest-tossed, to me:
I lift my lamp beside the
golden door.

The image is one of an infinitely generous earth mother, passively opening her arms to hordes of immigrants who come here on their own initiative. Such an image may have been adequate for the early days of colonization, but by the time these lines were written (1886) the force for immigration was largely manufactured inside our own borders by factory and mine owners who sought cheap labor not to be found among laborers already here. One group of foreigners after another was thus enticed into the United States to work at wretched jobs for wretched wages.

At present, it is largely the Mexicans who are being so exploited. It is particularly to the advantage of certain employers that there be many illegal immigrants. Illegal immigrant workers dare not complain about their working conditions for fear of being repatriated. Their presence reduces the bargaining power of all Mexican-American laborers. Cesar Chavez has repeatedly pleaded with congressional committees to close the doors to more Mexicans so that those here can negotiate effectively for higher wages and decent working conditions. Chavez understands the ethics of a lifeboat.

The interests of the employers of cheap labor are well served by the silence of the intelligentsia of the country. WASPS — White Anglo-Saxon Protestants — are particularly reluctant to call for a closing of the doors to immigration for fear of being called ethnocentric bigots. It was, therefore, an occasion of pure delight for this particular WASP to be present at a meeting when the points he would like to have made were made better by a non-WASP, speaking to other non-WASPS. It was in Hawaii, and most of the people in the room were second-level Hawaiian officials of Japanese ancestry. All Hawaiians are keenly aware of the limits of their environment, and the speaker had asked how it might be practically and constitutionally possible to close the doors to more immigrants to the islands. (To Hawaiians, immigrants from the other 49 states are as much of a threat as those from other nations. There is only so much room in the islands, and the islanders know it. Sophistical arguments that imply otherwise do not impress them.)

Yet the Japanese-Americans of Hawaii have active ties with the land of their origin. This point was raised by a Japanese-American member of the audience who asked the Japanese-American speaker: "But how can we shut the doors now? We have many friends and relations in Japan that we'd like to bring to Hawaii some day so that they can enjoy this land."

The speaker smiled sympathetically and responded slowly: "Yes, but we have children now and someday we'll have grandchildren. We can bring more people here from Japan only by giving away some of the land that we hope to pass on to our grandchildren some day. What right do we have to do that?"

To be generous with one's own possessions is one thing; to be generous with posterity's is quite another. This, I think, is the point that must be gotten across to those who would, from a commendable love of distributive justice, institute a ruinous system of the commons, either in the form of a world food bank or that of unrestricted immigration. Since every speaker is a member of some ethnic group it is always possible to charge him with ethnocentrism. But even after purging an argument of ethnocentrism the rejection of the commons is still valid and necessary if we are to save at least some parts of the world from environmental ruin. Is it not desirable that at least some of the grandchildren of people now living should have a decent place in which to live?

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The Asymmetry of Door-Shutting

We must now answer this telling point: "How can you justify slamming the door once you're inside? You say that immigrants should be kept out. But aren't we all immigrants, or the descendants of immigrants? Since we refuse to leave, must we not, as a matter of justice and symmetry, admit all others?"

It is literally true that we Americans of non-Indian ancestry are the descendants of thieves. Should we not, then, "give back" the land to the Indians; that is, give it to the now-living Americans of Indian ancestry? As an exercise in pure logic I see no way to reject this proposal. Yet I am unwilling to live by it, and I know no one who is. Our reluctance to embrace pure justice may spring from pure selfishness. On the other hand, it may arise from an unspoken recognition of consequences that have not yet been clearly spelled out.

Suppose, becoming intoxicated with pure justice, we "Anglos" should decide to turn our land over to the Indians. Since all our other wealth has also been derived from the land, we would have to give that to the Indians, too. Then what would we non-Indians do? Where would we go? There is no open land in the world on which men without capital can make their living (and not much unoccupied land on which men with capital can, either). Where would 200 million putatively justice-loving, non-Indian, Americans go? Most of them — in the persons of their ancestors — came from Europe, but they wouldn't be welcomed back there. Anyway, Europeans have no better title to their land than we to ours. They also would have to give up their homes. (But to whom? And where would *they* go?)

Clearly, the concept of pure justice produces an infinite regress. The law long ago invented statutes of limitations to justify the rejection of pure justice, in the interest of preventing massive disorder. The law zealously defends property rights — but only *recent* property rights. It is as though the physical principle of exponential decay applies to property rights. Drawing a line in time may be unjust, but any other action is practically worse.

We are all the descendants of thieves, and the world's resources are inequitably distributed, but we must begin the journey to tomorrow from the point where we are today. We cannot remake the past. We cannot, without violent disorder and suffering, give land and resources back to the "original" owners — who are dead anyway.

We cannot safely divide the wealth equitably among all present peoples, so long as people reproduce at different rates, because to do so would guarantee that our grandchildren — everyone's grandchildren — would have only a ruined world to inhabit.

Must Exclusion Be Absolute?

To show the logical structure of the immigration problem I have ignored many factors that would enter into real decisions made in a real world. No matter how convincing the logic may be it is probable that we would want, from time to time, to admit a few people from the outside to our lifeboat. Political refugees in particular are likely to cause us to make exceptions. We remember the Jewish refugees from Germany after 1933, and the Hungarian refugees after 1956. Moreover, the interests of national defense, broadly conceived, could justify admitting many men and women of unusual talents, whether refugees or not. (This raises the quality issue, which is not the subject of this essay.)

Such exceptions threaten to create runaway population growth inside the lifeboat, i.e., the receiving country. However, the threat can be neutralized by a population policy that includes immigration. An effective policy is one of flexible control.

Suppose, for example, that the nation has achieved a stable condition of ZPG, which (say) permits 1.5 million births yearly. We must suppose that an acceptable system of allocating birthrights to potential parents is in effect. Now suppose that an inhumane regime in some other part of the world creates a horde of refugees, and that there is a widespread desire to admit some to our country. At the same time, we do not want to sabotage our population control system. Clearly, the rational path to pursue is the following: If we decide to admit 100,000 refugees

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this year we should compensate for this by reducing the allocation of birth rights in the following year by a similar amount, that is, downward to a total of 1.4 million. In that way we could achieve both humanitarian and population control goals. (And the refugees would have to accept the population controls of the society that admits them. It is not inconceivable that they might be given proportionately fewer rights than the native population.)

In a democracy, the admission of immigrants should properly be voted on. But by whom? It is not obvious. The usual rule of a democracy is votes for all. But it can be questioned whether a universal franchise is the most just one in a case of this sort. Whatever benefits there are in the admission of immigrants presumably accrue to everyone. But the costs would be seen as falling most heavily on potential parents, some of who would have to postpone or forego having their (next) child because of the influx of immigrants. The double question *Who benefits? Who pays?* suggests that a restriction of the usual democratic franchise would be appropriate and just in this case. Would our particular quasi-democratic form of government be flexible enough to institute such a novelty? If not, the majority might, out of humanitarian motives, impose an unacceptable burden (the foregoing of parenthood) on a minority, thus producing political instability.

Plainly many new problems will arise when we consciously face the immigration question and seek rational answers. No workable answers can be found if we ignore population problems. And — if the argument of this essay is correct — so long as there is no true world government to control reproduction everywhere it is impossible to survive in dignity if we are to be guided by Spaceship ethics. Without a world government that is sovereign in reproductive matters mankind lives, in fact, on a number of sovereign lifeboats. For the foreseeable future survival demands that we govern our actions by the ethics of a lifeboat. Posterity will be ill served if we do not. ■

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Carrying Capacity As an Ethical Concept

by Garrett Hardin

Lifeboat ethics is merely a special application of the logic of the commons.[1] The classic paradigm is that of a pasture held as common property by a community and governed by the following rules: First, each herdsman may pasture as many cattle as he wishes on the commons; and second, the gain from the growth of cattle accrues to the individual owners of the cattle. In an under populated world the system of the commons may do no harm and may even be the most economic way to manage things, since management costs are kept to a minimum. In an overpopulated (or overexploited) world a system of the commons leads to ruin, because each herdsman has more to gain individually by increasing the size of his herd than he has to lose as a single member of the community guilty of lowering the carrying capacity of the environment. Consequently he (with others) overloads the commons.

Even if an individual fully perceives the ultimate consequences of his actions he is most unlikely to act in any other way, for he cannot count on the restraint *his* conscience might dictate being matched by a similar restraint on the part of *all* the others. (Anything less than all is not enough.) Since mutual ruin is inevitable, it is quite proper to speak of the *tragedy* of the commons.

Tragedy is the price of freedom in the commons. Only by changing to some other system (socialism or private enterprise, for example) can ruin be averted. In other words, in a crowded world survival requires that some freedom be given up. (We have, however, a choice in the freedom to be sacrificed.) Survival is possible under several different politico-economic systems — but not under the system of the commons. When we understand this point, we reject the ideal of distributive justice stated by Karl Marx a century ago, "From each according to his ability, to each according to his needs."[2] This ideal might be defensible if "needs" were defined by the larger community rather than by the individual (or individual political unit) *and if "needs" were static.*[3] But in the past quarter-century, with the best will in the world, some humanitarians have been asserting that rich populations must supply the needs of poor populations even though the recipient populations increase without restraint. At the United Nations conference on population in Bucharest in 1973, spokesmen for the poor nations repeatedly said in effect: "We poor people have the right to reproduce as much as we want to; you in the rich world have the responsibility of keeping us alive."

Such a Marxian disjunction of rights and responsibilities inevitably tends toward tragic ruin for all. It is almost incredible that this position is supported by thoughtful persons, but it is. How does this come about? In part, I think, because language deceives us. When a disastrous loss of life threatens, people speak of a "crisis," implying that the threat is temporary. More subtle is the implication of quantitative stability built into the pronoun "they" and its relatives. Let me illustrate this point with quantified prototype statements based on two different points of view.

Crisis analysis: "*These* poor people (1,000,000) are starving, because of a crisis (flood, drought, or the like). How can we

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refuse *them* (1,000,000)? Let us feed *them* (1,000,000). Once the crisis is past those who are still hungry are few (say 1,000) and there is no further need for our intervention."

Crunch analysis: "*Those* (1,000,000) who are hungry are reproducing. We send food to *them* (1,010,000). *Their* lives (1,020,000) are saved. But since the environment is still essentially the same, the next year *they* (1,030,000) ask for more food. We send it to *them* (1,045,000); and the next year *they* (1,068,000) ask for still more. Since the need has not gone away, it is a mistake to speak of a passing crisis: It is evidently a permanent crunch that this growing "they face — a growing disaster, not a passing state of affairs."

"They" increases in size. Rhetoric makes no allowance for a ballooning pronoun. Thus we can easily be deceived by language. We cannot deal adequately with ethical questions if we ignore quantitative matters. This attitude has been rejected by James Sellers, who dismisses prophets of doom from Malthus[4] to Meadows[5] as "chiliasts." Chiliasts (or millenialists, to use the Latin-derived equivalent of the Greek term) predict a catastrophic end of things a thousand years from some reference point. The classic example is the prediction of Judgment Day in the year 1000 anno Domini. Those who predicted it were wrong, of course; but the fact that this specific prediction was wrong is no valid criticism of the use of numbers in thinking. Millenialism is numerology, not science.

In science, most of the time, it is not so much exact numbers that are important as it is the relative size of numbers and the direction of change in the magnitude of them. Much productive analysis is accomplished with only the crude quantitation of "order of magnitude" thinking. First and second derivatives are often calculated with no finer aim than to find out if they are positive or negative. Survival can hinge on the crude issue of the sign of change, regardless of number. This is a far cry from the spurious precision of numerology. Unfortunately, the chasm between the "two cultures," as C. P. Snow called them,[6] keeps many in the non-scientific culture from understanding the significance of the quantitative approach. One is tempted to wonder also whether an additional impediment to understanding may not be the mortal sin called pride, which some theologians regard as the mother of all sins.

Returning to Marx, it is obvious that the *each* in "to each according to his needs" is not — despite the grammar — a unitary, stable entity; "each is a place-holder for a ballooning variable." Before we commit ourselves to saving the life of *each* and every person in need we had better ask this question: "*And then what?*" That is, what about tomorrow, what about posterity? As Hans Jonas has pointed out,[7] traditional ethics has almost entirely ignored the claims of posterity. In an overpopulated world humanity cannot long endure under a regime governed by posterity-blind ethics. It is the essence of ecological ethics that it pays attention to posterity.

Since helping starving people requires that we who are rich give up some of our wealth, any refusal to do so is almost sure to be attributed to selfishness. Selfishness there may be, but focusing on selfishness is likely to be non-productive. In truth, a selfish motive can be found in all policy proposals. The selfishness of *not* giving is obvious and need not be elaborated. But the selfishness of giving is no less real, though more subtle.[8] Consider the sources of support for Public Law 480, the act of Congress under which surplus foods were given to poor countries, or sold to them at bargain prices ("concessionary terms" is the euphemism). Why did we give food away? Conventional wisdom says it was because we momentarily transcended our normal selfishness. Is that the whole story?

It is not. The "we" of the above sentence needs to be subdivided. The farmers who grew the grain did not give it away. They sold it to the government (which then gave it away). Farmers received selfish benefits in two ways: the direct sale of grain, and the economic support to farm prices given by this governmental purchase in an otherwise free market. The operation of P. L. 480 during the past quarter-century brought American farmers to a level of prosperity never known before.

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Who else benefitted — in a selfish way? The stockholders and employees of the railroads that moved grain to seaports benefitted. So also did freight-boat operators (U.S. "bottoms" were specified by law). So also did grain elevator operators. So also did agricultural research scientists who were financially supported in a burgeoning but futile effort "to feed a hungry world."[9] And so also did the large bureaucracy required to keep the P. L. 480 system working. In toto, probably several million people personally benefitted from the P. L. 480 program. Their labors cannot be called wholly selfless.

Who *did* make a sacrifice for P. L. 480? The citizens generally, nearly two hundred million of them, paying directly or indirectly through taxes. But each of these many millions lost only a little, whereas each of the million or so gainers gained a great deal. The blunt truth is that *philanthropy pays* — if you are hired as a philanthropist. Those on the gaining side of P. L. 480 made a great deal of money and could afford to spend lavishly to persuade Congress to continue the program. Those on the sacrificing side sacrificed only a little bit per capita and could not afford to spend much protecting their pocketbooks against philanthropic inroads. And so P. L. 480 continued, year after year.

Should we condemn philanthropy when we discover that some of its roots are selfish? I think not, otherwise probably no philanthropy would be possible. The secret of practical success in large-scale public philanthropy is this: See to it that the losses are widely distributed so that the per capita loss is small, but concentrate the gains in a relatively few people so that these few will have the economic power needed to pressure the legislature into supporting the program.

"Even judging an act by its consequences is not easy. We are limited by the basic theorem of ecology. 'We can never do merely one thing.'"

I have spent some time on this issue because I would like to dispose once and for all of condemnatory arguments based on "selfishness." As a matter of principle we should always assume that selfishness is *part* of the motivation of every action. But what of it? If Smith proposes a certain public policy, it is far more important to know whether the policy will do public harm or public good than it is to know whether Smith's motives are selfish or selfless. Consequences ("ends") can be more objectively determined than motivations ("means"). Situational ethics wisely uses consequences as the measure of morality. "If the end does not justify the means, what does?" asks Joseph Fletcher.[10] The obsession of older ethical systems with means and motives is no doubt in part a consequence of envy, which has a thousand disguises.[11] (Though I am sure this is true, the situationist should not dwell on envy very long, for it is after all only a motive, and as such not directly verifiable. In any case public policy must be primarily concerned with consequences.)

Even judging an act by its consequences is not easy. We are limited by the basic theorem of ecology. "We can never do merely one thing."[12] The fact that an act has many consequences is all the more reason for de-emphasizing motives as we carry out our ethical analyses. Motives by definition apply only to intended consequences. The multitudinous unintended ones are commonly denigrated by the term "side-effects." But "The road to hell is paved with good intentions," so let's have done with motivational evaluations of public policy.

Even after we have agreed to eschew motivational analysis, foreign aid is a tough nut to crack. The literature is large and contradictory, but it all points to the inescapable conclusion that a quarter of a century of earnest effort has not conquered world poverty. To many observers the threat of future disasters is more convincing now than it was a quarter of a century ago, and the disasters are not all in the future either.[13] Where have we gone wrong in foreign aid?

We wanted to do good, of course. The question, "How can we help a poor country?" seems

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like a simple question, one that should have a simple answer. Our failure to answer it suggests that the question is not as simple as we thought. The variety of contradictory answers offered is disheartening.

How can we find our way through this thicket? I suggest we take a cue from a mathematician. The great algebraist Karl Jacobi (1804-1851) had a simple stratagem that he recommended to students who found themselves butting their heads against a stone wall. *Umkehren, immer umkehren* — "Invert, always invert." Don't just keep asking the same old question over and over: Turn it upside down and ask the opposite question. The answer you get then may not be the one you want, but it may throw useful light on the question you started with.

Let's try a Jacobian inversion of the food/population problem. To sharpen the issue, let us take a particular example — say India. The question we want to answer is, "How can we help India?" But since that approach has repeatedly thrust us against a stone wall, let's pose the Jacobian invert, "How can we *harm* India? After we've answered this perverse question we will return to the original (and proper) one.

As a matter of method, let us grant ourselves the most malevolent of motives: Let us ask, "How can we harm India — *really* harm her?" Of course we might plaster the country with thermonuclear bombs, speedily wiping out most of the 600 million people. But, to the truly malevolent mind, that's not much fun; a dead man is beyond harming. Bacterial warfare could be a bit "better," but not much. No: We want something that will really make India suffer, not merely for a day or a week, but on and on and on. How can we achieve this inhumane goal?

Quite simply: By sending India a bounty of food, year after year. The United States exports about 80 million tons of grain a year. Most of it we sell. The foreign exchange it yields we use for such needed imports as petroleum (38 percent of our oil consumption in 1974), iron ore, bauxite, chromium, tin, etc. But in the pursuit of our malevolent goal let us "unselfishly" tighten our belts, make sacrifices, and do without that foreign exchange. Let us *give* all 80 million tons of grain to the Indians each year.

On a purely vegetable diet it takes about 400 pounds of grain to keep one person alive and healthy for a year. The 600 million Indians need 120 million tons per year; since their nutrition is less than adequate presumably they are getting a bit less than that now. So the 80 million tons we give them will almost double India's per capita supply of food. With a surplus, Indians can afford to vary their diet by growing some less efficient crops; they can also convert some of the grain into meat (pork and chickens for the Hindus, beef and chickens for the Moslems). The entire nation can then be supplied not only with plenty of calories, but also with an adequate supply of high quality protein. The peoples' eyes will sparkle, their steps will become more elastic, and they will be capable of more work. "Fatalism" will no doubt diminish. (Much so-called fatalism is merely a consequence of malnutrition.) Indians may even become a bit overweight, though they will still be getting only two-thirds as much food as the average inhabitant of a rich country. Surely, we think, surely a well-fed India would be better off?

Not so: *Ceteris paribus,* they will ultimately be worse off. Remember, "We can never do merely one thing." A generous gift of food would have not only nutritional consequences, it would also have political and economic consequences. The difficulty of distributing free food to a poor people is well known. Harbor, storage, and transport inadequacies result in great losses of grain to rats and fungi. Political corruption diverts food from those who need it most to those who are more powerful. More abundant supplies depress free market prices and discourage native farmers from growing food in subsequent years. Research into better ways of agriculture is also discouraged. Why look for better ways to grow food when there is food enough already?

There are replies, of sorts, to all the above points. It may be maintained that all these evils are only temporary ones. In time, organizational sense will be brought into the distributional system and the government will crack down on corruption. Realizing the desirability of producing more food, for export if nothing else, a wise government

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will subsidize agricultural research in spite of an apparent surplus. Experience does not give much support to this optimistic view, but let us grant the conclusions for the sake of getting on to more important matters. Worse is to come.

The Indian unemployment rate is commonly reckoned at 30 percent, but it is acknowledged that this is a minimum figure. *Under*employment is rife. Check into a hotel in Calcutta with four small bags and four bearers will carry your luggage to the room – with another man to carry the key. Custom, and a knowledge of what the traffic will bear, decrees this practice. In addition malnutrition justifies it in part. Adequately fed, half as many men would suffice. So one of the early consequences of achieving a higher level of nutrition in the Indian population would be to increase the number of unemployed.

India needs many things that food will not buy. Food will not diminish the unemployment rate, quite the contrary; nor will it increase the supply of minerals, bicycles, clothes, automobiles, gasoline, schools, books, movies, or television. All these things require energy for their manufacture and maintenance.

Of course, food is a form of energy, but it is controvertible to other forms only with great loss. So we are practically justified in considering energy and food as mutually exclusive goods. On this basis the most striking difference between poor and rich countries is not in the food they eat but in the energy they use. On a per capita basis rich countries use about three times as much of the primary goods — grain and the like — as do poor countries. (To a large extent this is because the rich convert much of the grain to more "wasteful" animal meat.) But when it comes to energy, rich countries use ten times as much per capita. (Near the extremes Americans use 60 times as much per person as Indians.) By reasonable standards much of this energy may be wasted (e.g., in the manufacture of "exercycles" for sweating the fat off people who have eaten too much), but a large share of this energy supplies the goods we regard as civilized: effortless transportation, some luxury foods, a variety of sports, clean space heating, more than adequate clothing, and energy-consuming arts — music, visual arts, electronic auxiliaries, etc. Merely giving food to a people does almost nothing to satisfy the appetite for any of these other goods.

But a well-nourished people is better fitted to try to wrest more energy from its environment. The question then is this: Is the native environment able to furnish more energy? And at what cost?

In India energy is already being gotten from the environment at a fearful cost. In the past two centuries millions of acres of India have been deforested in the struggle for food, with the usual environmental degradation. The Vale of Kashmir, once one of the garden spots of the world, has been denuded to such an extent that the hills no longer hold water as they once did, and the springs supplying the famous gardens are drying up. So desperate is the need for charcoal for fuel that the Kashmiri now make it out of tree leaves. This wasteful practice denies the soil of needed organic mulch.

Throughout India, as is well known, cow dung is burned to cook food. The minerals of the dung are not thereby lost, but the ability of the dung to improve soil tilth is. Some of the nitrogen in the dung goes off in the air and does not return to Indian soil. Here we see a classic example of the "vicious circle": Because Indians are poor they burn dung, depriving the soil of nitrogen and making themselves still poorer the following year. If we give them plenty of food, as they cook this food with cow dung they will lower still more the ability of their land to produce food.

Let us look at another example of this counter-productive behavior. Twenty-five years ago western countries brought food and medicine to Nepal. In the summer of 1974 a disastrous flood struck Bangladesh, killing tens of thousands of people, by government admission. (True losses in that part of the world are always greater than admitted losses.) Was there any connection between feeding Nepal and flooding Bangladesh? Indeed there was, and is.[14]

Nepal nestles among the Himalayas. Much of its land is precipitous, and winters are cold. The Nepalese need fuel, which they get from trees. Because more Nepalese are being kept alive

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now, the demand for timber is escalating. As trees are cut down, the soil under them is washed down the slopes into the rivers that run through India and Bangladesh. Once the absorptive capacity of forest soil is gone, floods rise faster and to higher maxima. The flood of 1974 covered two-thirds of Bangladesh, twice the area of "normal" floods — which themselves are the consequence of deforestation in previous centuries.

By bringing food and medicine to Nepal we intended only to save lives, but we can never do merely one thing, and the Nepalese lives we saved created a Nepalese energy-famine. The lives we saved from starvation in Nepal a quarter of a century ago were paid for in our time by lives lost to flooding and its attendant evils in Bangladesh. The saying "Man does not live by bread alone" takes on new meaning.

Still, we have not described what may be the worst consequence of a food-only policy: revolution and civil disorder. Many kind-hearted people who support food aid programs solicit the cooperation of "hard-nosed" doubters by arguing that good nutrition is needed for world peace. Starving people will attack others, they say. Nothing could be further from the truth. The monumental studies of Ancel Keys and others have shown that starving people are completely selfish.[15] They are incapable of cooperating with others, and they are incapable of laying plans for tomorrow and carrying them out. Moreover, modern war is so expensive that even the richest countries can hardly afford it.

The thought that starving people can forcefully wrest subsistence from their richer brothers may appeal to our sense of justice, *but it just ain't so.* Starving people fight only among themselves, and that inefficiently.

So what would happen if we brought ample supplies of food to a population that was still poor in everything else? They would still be incapable of waging war at a distance, but their ability to fight among themselves would be vastly increased. With vigorous, well-nourished bodies and a keen sense of their impoverishment in other things, they would no doubt soon create massive disorder in their own land. Of course, they might create a strong and united country, but what is the probability of that? Remember how much trouble the thirteen colonies had in forming themselves into a United States. Then remember that India is divided by two major religions, many castes, fourteen major languages, and a hundred dialects. A partial separation of peoples along religious lines in 1947, at the time of the formation of Pakistan and of independent India, cost untold millions of lives. The budding off of Bangladesh (formerly East Pakistan) from the rest of Pakistan in 1971 cost several million more. All these losses were achieved on a low level of nutrition. The possibilities of blood-letting in a population of 600 million well-nourished people of many languages and religions and no appreciable tradition of cooperation stagger the imagination. Philanthropists with any imagination at all should be stunned by the thought of 600 million well-fed Indians seeking to meet their energy needs from their own resources.

So the answer to our Jacobian question, "How can we harm India?" is clear: Send food *only.* Escaping the Jacobian by re-inverting the question, we now ask, "How can we *help* India?" Immediately we see that we must *never* send food without a matching gift of non-food energy. But before we go careening off on an intoxicating new program we had better look at some more quantities.

On a per capita basis, India uses the energy equivalent of one barrel of oil per year; the U.S. uses sixty. The world average of all countries, rich and poor, is ten. If we want to bring India only up to the present world average, we would have to send India about 9 x 600 million barrels of oil per year (or its equivalent in coal, timber, gas, or whatever). That would be more than five billion barrels of oil equivalent. What is the chance we will make such a gift?

Surely it is nearly zero. For scale, note that our total yearly petroleum use is seven billion barrels (of which we import three billion). Of course we use (and have) a great deal of coal, too. But these figures should suffice to give a feeling of scale.

More important is the undoubted psychological fact that

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a fall in income tends to dry up the springs of philanthropy. Despite wide disagreements about the future of energy it is obvious that from now on, for at least the next twenty years and possibly for centuries, our per capita supply of energy is going to fall, year after year. The food we gave in the past was "surplus." By no accounting do we have an energy surplus. In fact, the perceived deficit is rising year by year.

India has about one-third as much land as the United States. She has about three times as much population. If her people-to-land ratio were the same as ours she would have only about seventy million people (instead of 600 million). With the forested and relatively unspoiled farmlands of four centuries ago, seventy million people could probably make it in comfort and dignity — provided they didn't increase!

To send food only to a country already populated beyond the carrying capacity of its land is to collaborate in the further destruction of the land and the further impoverishment of its people.

Food plus energy is a recommendable policy; but for a large population under today's conditions this policy is defensible only by the logic of the old saying, "If wishes were horses, beggars would ride." The fantastic amount of energy needed for such a program is simply not in view. (We have mentioned nothing of the equally monumental "infrastructure" of political, technological, and educational machinery needed to handle unfamiliar forms and quantities of energy in the poor countries. In a short span of time this infrastructure is as difficult to bring into being as is an adequate supply of energy.)

"For posterity's sake we should never send food to any population that is beyond the realistic carrying capacity of its land. The question of triage does not even arise."

In summary, then, here are the major foreign-aid possibilities that tender minds are willing to entertain:

a. Food plus energy — a conceivable, but practically impossible, program.

b. Food alone — a conceivable and possible program, but one which would destroy the recipient.

In the light of this analysis the question of triage[8] shrinks to negligible importance. If *any* gift of food to overpopulated countries does more harm than good, it is not necessary to decide which countries get the gift and which do not. For posterity's sake we should never send food to any population that is beyond the realistic carrying capacity of its land. The question of triage does not even arise.

Joseph Fletcher neatly summarized this point when he said, "We should give if it helps but not if it hurts." We would do well to memorize this aphorism, but we must be sure we understand the proper object of the verb, which is the recipient. Students of charity have long recognized that an important motive of the giver is to help himself, the giver.[16] Hindus give to secure a better life in the next incarnation; Moslems, to achieve a richer paradise at the end of this life; and Christians in a simpler day no doubt hoped to shorten their stay in purgatory by their generosity. Is there anyone who would say that contemporary charity is completely free of the self-serving element?

To deserve the name, charity surely must justify itself primarily, perhaps even solely, by the good it does the recipient, not only in the moment of giving but in the long run. That every act has multiple consequences was recognized by William L. Davison, who groups the consequences of an act of charity into two value-classes, positive and negative.[17] True charity, he said,

> *confers benefits, and it refrains from injuring... Hence, charity may sometimes assume an austere and even apparently unsympathetic aspect toward its object. When that object's real good cannot be achieved without inflicting pain and suffering, charity does not*

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shrink from the infliction... Moreover, a sharp distinction must be drawn between charity and amiability or good nature — the latter of which is a weakness and may be detrimental to true charity, although it also may be turned to account in its service.

To the ecologically-minded student of ethics, most traditional ethics look like mere amiability, focusing as they do on the manifest misery of the present generation to the neglect of the more subtle but equally real needs of a much larger posterity. It is amiability that feeds the Nepalese in one generation and drowns Bangladeshis in another. It is amiability that, contemplating the wretched multitudes of Indians asks, "How can we let them starve?" implying that we, and only we, have the power to end their suffering. Such an assumption surely springs from hubris.

Fifty years ago India and China were equally miserable, and their future prospects looked bleak. During the past generation we have given India "help" on a massive scale; China, because of political differences between her and us, has received no "help" from us and precious little from anybody else. Yet who is better off today? And whose future prospects look brighter? Even after generously discounting the reports of the first starry-eyed Americans to enter China in recent years, it is apparent that China's 900 million are physically better off than India's 600 million.

All that has come about without an iota of "help" from us.

Could it be that a country that is treated as a responsible agent does better in the long run than one that is treated as an irresponsible parasite which we must "save" repeatedly? Is it not possible that robust responsibility is a virtue among nations as it is among individuals? Can we tolerate a charity that destroys responsibility?

Admittedly, China did not reach her present position of relative prosperity without great suffering, great loss of life. Did millions die? Tens of millions? We don't know. If we had enjoyed cordial relations with the new China during the birth process, no doubt we would, out of a rich store of amiability, have seen to it that China remained as irresponsible and miserable as India. Our day-to-day decisions, with their delayed devastation, would have been completely justified by our traditional, posterity-blind ethics which seems incapable of asking the crucial question, "*And then what?*"

Underlying most ethical thought at present is the assumption that human life is the *summum bonum*. Perhaps it is; but we need to inquire carefully into what we mean by "human life." Do we mean the life of each and every human being now living, all 4,000,000,000 of them? Is each presently existing human being to be kept alive (and breeding) regardless of the consequences for future human beings? So, apparently, say amiable, individualistic, present-oriented, future-blind western ethicists.

An ecologically-oriented ethicist asks, "And then what?" and insists that the needs of posterity be given a weighting commensurate with those of the present generation. The economic prejudice that leads to a heavy discounting of the future must be balanced by a recognition that the population of posterity vastly exceeds the population of the living.[18] We know from experience that the environment can be irreversible damaged and the carrying capacity of a land permanently lowered.[14] Even a little lowering multiplied by an almost limitless posterity should weigh heavily in the scales against the needs of those living, once our charity expands beyond the limits of simple amiability.

We can, of course, increase carrying capacity somewhat. But only hubris leads us to think that our ability to do so is without limit. Despite all our technological accomplishments — and they are many — there is a potent germ of truth in the saying of Horace (65-8 B.C.): *Naturam expelles furca, tamen usque recurret.* "Drive nature off with a pitchfork, nevertheless she will return with a rush." This is also the message of Rachel Carson,[19] which has been corroborated by many others.[20]

The morality of an act is a function of the state of the system at the time the act is performed — this is the foundation stone of situationist, ecological ethics.[12] A

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time-blind absolute ethical principle like that implied by the shibboleth, "the sanctity of life" leads to greater suffering than its situationist, ecological alternative — and ultimately and paradoxically, even to a lesser quantity of life over a sufficiently long period of time. The interests of posterity can be brought into the reckoning of ethics if we abandon the idea of the sanctity of the carrying capacity.

Those who would like to make the theory of ethics wholly rational must look with suspicion on any statement that includes the word "sanctity." There is a whole class of terms whose principal (and perhaps sole) purpose seems to be to set a stop to inquiry: "Self-evident" and "sanctity" are members of this class. I must, therefore, show that "sanctity" is used as something more than a discussion-stopper when it occurs in the phrase "the sanctity of the carrying capacity."

Some there are who so love the world of Nature (that is, Nature *sine* Man) that they regard the preservation of a world without humankind as a legitimate objective of human beings. It is difficult to argue this ideal dispassionately and productively. Let me only say that I am not one of this class of nature-lovers; my view is definitely homocentric. Even so I argue that we would do well to accept "Thou shalt not exceed the carrying capacity of any environment" as a legitimate member of a new Decalogue. When for the sake of momentary gain by human beings the carrying capacity is transgressed, the long-term interests of the same human beings — "same" meaning themselves and their successors in time — are damaged. I should not say that the carrying capacity is something that is *intrinsically* sacred (whatever *that* may mean) but that the rhetorical device "carrying capacity" is a shorthand way of dealing time and posterity into the game. A mathematician would, I imagine, view "carrying capacity" as an algorithm, a substitute conceptual element with a different grammar from the elements it replaces. Algorithmic substitutions are made to facilitate analysis; when they are well chosen they introduce no appreciable errors. I think "carrying capacity" meets significant analytical demands of a posterity-oriented ethics.

In an uncrowded world there may be no ethical need for the ecological concept of the carrying capacity. But ours is a crowded world. We need this concept if we are to minimize human suffering in the long run (and not such a very long run at that). How Western man has pretty well succeeded in locking himself into a suicidal course of action by developing and clinging to a concept of the absolute sanctity of life is a topic that calls for deep inquiry. Lacking the certain knowledge that might come out of such a scholarly investigation, I close this essay with a personal view of the significance of —

CARRYING CAPACITY (to Paul Sears)

A man said to the universe:
"Sir, I exist!"
"However," replied the universe,
"The fact has not created in me
A sense of obligation."
— Stephen Crane, 1899

So spoke the poet, at century's end;
And in those dour days when schools displayed
the world,
"Warts and all," to their reluctant learners,
These lines thrust through the layers of wishfulness,
Forming the minds that later found them to be true.

All that is past, now.
Original sin, then mere personal ego,
Open to the shafts of consciousness,
Now flourishes as an ego of the tribe
Whose battle cry (which none dare question) is
"Justice" — But hear the poet's shade:

A tribe said to the universe,
"Sir, we exist!"
"So I see," said the universe,
"But your multitude creates in me
No feeling of obligation.

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"Need creates right, you say? Your need, your right?
Have you forgot we're married?
Humanity and universe — Holy, indissoluble pair!
Nothing you can do escapes my vigilant response.

"Dam my rivers and I'll salt your crops;
Cut my trees and I'll flood your plains.
Kill 'pests' and, by God, you'll get a silent spring!
Go ahead — save every last baby's life!
I'll starve the lot of them later,
When they can savor to the full
The exquisite justice of truth's retribution.
Wrench from my earth those exponential powers
No wobbling Willie should e'er be trusted with:
Do this, and a million masks of envy shall; create
A hell of blackmail and tribal wars
From which civilization will never recover.

"Don't speak to me of shortage. My world is vast
And has more than enough — for no more than enough.
There is a shortage of nothing, save will and wisdom;
But there is a longage of people.

"Hubris — that was the Greeks' word for what ails you.
Pride fueled the pyres of tragedy
Which died (some say) with Shakespeare.
O, incredible delusion! That potency should have no limits!
'We believe no evil 'til the evil's done' —
Witness the deserts' march across the earth,
Spawned and nourished by men who whine,
'Abnormal weather.'
Nearly as absurd as crying, 'Abnormal universe!'...
But I suppose you'll be saying that next."

"Ravish capacity: reap consequences.
Man claims the first a duty and calls what follows Tragedy.
Insult ... Backlash. Not even the universe can break
This primal link. Who, then, has the power
To put an end to tragedy? Only those who recognize hubris in themselves." ■

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What Heretics Are For

by Garrett Hardin

"Myths," said Salustios, are "things that never happened but always are." Though distinguishable from myths, the best of the fairy tales share this paradoxical relation to reality. A truth we are reluctant to acknowledge can be insinuated into the mind by the account of an event that never happened. Hans Christian Anderson's *The Emperor's New Clothes* tells just such a story. His emperor is a fiction, unnamed and unplaced in time ("many years ago"), but he is also all of us at all times — and no fiction.

The swindlers who fleeced the emperor first caught him in a neat logical trap. The exorbitantly priced and nonexistent clothes they tailored had the wonderful quality, they said, of being invisible to anyone who was "hopelessly stupid or unfit for his office." Given the Emperor's acceptance of this criterion of reality, his loyal subjects were psychologically bound to see the invisible. Behold, then, the noble Emperor, naked as a jaybird, marching in parade to the enthusiastic plaudits of the throng! The denouement comes when the innocent child protests: "But the Emperor is naked!"

This scene, first projected on the mind's eye of a delighted, giggling child, is periodically recalled by realities of the external world. Every generation brings new swindlers (many of them, curiously, self-deceived) and more new clothes for credulous emperors. At any point in time a sizeable wardrobe of such clothes is being paraded in the marketplace of ideas. There are far too few children, too few iconoclasts (to use another image), to keep up with the busy looms of the weavers of invisible cloth.

The story of *The Emperor's New Clothes* no doubt strikes completely socialized, other-directed adults as preposterous, but reality outrages myth. In Anderson's story the child's outcry leads to a rapid erosion of faith among the spectators; truth strips the Emperor naked. Unhappily, in real life, majority opinion frequently overwhelms perception.

Some experiments carried out by the social psychologist Solomon Asch are most enlightening. Asch asked a small group of college men to identify the longest of several lines drawn on paper. Unbeknownst to one of them, all the others had been instructed to agree on a preposterously wrong answer. Choices were announced in open meeting. As the responses forced the "odd man out" to become aware of his position, he not infrequently gave way to the majority and expressed his agreement with them. It does not take an Inquisition to make heresy painful. ("Heresy" comes from a Greek word meaning "to choose for oneself.") Out of 123 men subjected to this ordeal, 37 percent conformed. (Is it significant that this is about the same percentage as that of "placebo reactors," people whose pain is reduced by the administration of a placebo, a medication known to have no beneficial effect?)

Asch's experiment might tempt a cynic to rewrite the Anderson story to make the little child yield to adult opinion. We would not accept such a rewriting, of course, because the cynical version would deprive us of hope. The progress of science — indeed of all positive knowledge — depends on the courage of Thoreau's "majority of one" in the face of nearly unanimous error. Yet there are many naked emperors parading the streets of learning, and we need a few people who have the Anderson child's confidence in their own senses and judgment. Statistically speaking, the populace may well be right more often than wrong — but sometimes the Emperor is indeed naked.

What follows is one heretic's attempt to point out some of the naked emperors of our time. Heresy is no guarantee of truth, but let us not forget (as T. H. Huxley said) that every new truth begins as heresy. ■

This is the Preface to (and the reason for the title of) Naked Emperors: Essays of a Taboo Stalker (1982) *by* ***Garrett Hardin, Ph.D.***

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Identifying, Screening, and Tracking Aliens

The fatal gap in the anti-terrorist shield

by David Simcox

A senior official of the Immigration and Naturalization Service (INS) told Congress that the 1993 Islamic terrorists' attack on the World Trade Center had been a "wake-up call" for his agency. He might have noted the alarm bells that also rang with the 1993 terrorist killing of two Americans and wounding of three by Pakistani asylum seeker Mir Aimal Kansi outside CIA headquarters in Langley, Virginia. Since those events INS has received a number of important new legislative and regulatory authorities and mandates to better monitor and screen the country's 30 million foreign-born residents and the 325 million temporary entrants coming in each year."

America's 'Alien and Sedition Act Hangover'

Despite the alarm bells of 1993, the INS and Justice Department and Congressional leaders on law enforcement and anti-terrorist concerns have in some cases slumbered on. Congress and the White House themselves have at times impeded or reversed some of the tighter controls legislated in 1996 in the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) and other provisions in legislation dating back to the Immigration Reform and Control Act of 1986.

Senior FBI officials have detailed repeatedly and clearly in Congressional testimony the existence of Middle Eastern terrorist and espionage rings inside the country, such as Hezbollah, Hamas, Islamic Jihad, Al Qa'eda, Egypt's Al Gama' Islamyya, and the hard-line Iranian student organization Anjoman Islamie. But the focus of their concern has been on monitoring them, rather than on how they got here and how they can be removed.[1] Similarly, the State Department's 2000 Report on Global Terrorism details the origins and overseas activities of these groups, but has little to say about their numbers and activities in the U.S. or their members' methods for entering and establishing themselves in the U.S. — notwithstanding State's key responsibility of screening U.S.-bound visitors.[2]

America's political leaders have never seen much political opportunity in laws controlling and monitoring the political behavior of aliens in the United States. The nation suffers from a two-century old "Alien and Sedition Act hangover." The outer limits of individual freedom, privacy, and civil rights have steadily expanded in the popular mind since the Vietnam era, along with a willingness to extend these values to aliens just joining or seeking to join our society. The beatific vision of an "inclusionary society" has at times edged out ordinary prudence. Rising anti-regulatory instincts, coupled with the tight labor market of the middle and late 1990s, reinforced the aversions of opinion and business leaders to controls, nearly nullifying employer sanctions legislation.

September 11, 2001, should have been the shrillest and most imperious alarm bell of all. A solid eighty percent of those polled by CBS-New York Times immediately after the trade center bombings agreed that it is too easy for foreigners to enter the U.S. Of the nineteen known hijackers, fifteen entered with visas through legal ports of entry, though a number overstayed. Some were admitted despite being flagged somewhere in federal lookout databases. Several entered on stolen passports. Most easily acquired drivers licenses even though out of status and misrepresenting their identities. And some detainees

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acquired the more carefully screened Commercial Driver's License, allowing them to drive hazardous material trucks. The extent of the terrorist groups' illegal presence in the U.S. is apparent in the more than one hundred suspects and possible material witnesses that INS has been able to hold on immigration violations.

The record of immigration control during the last decade and a half shows a pattern of Congressional willingness to adopt mildly restrictive legislation and then either weaken it with provisos and amendments, delay implementation, or fail to provide the funds and political backing to carry it through. Will September 11 awaken Congress and the public to the essentiality of immigration controls to national security and tranquility? Or will they resume business as usual as they did after the 1996 legislative efforts?

This moment of public alarm and shifting perceptions in an endangered nation calls for an assessment of major immigration ID and tracking systems — existing or proposed — to determine how they might be strengthened to meet the threat, put into place more quickly, or moved forward from the recommendation stage.

Uniform, Reliable Identification for All Americans, Legal Residents, and Visitors

Fully seventy percent of respondents told Pew Research Center pollsters following the New York terror that they would favor a national ID card to be carried at all times and shown to police on request. While this is somewhat higher than before September 11, previous polls in the 1990s have regularly shown a solid majority favors national ID.[3]

But in Congress the term "national ID card" is regularly used as a lethal epithet against most measures to improve national identification. Probably the most important casualty of this psychosis was the 1996 law mandating the recording of drivers license applicants' social security numbers and their verification by the Social Security Administration (SSA). Labeled as an effort to "federalize" the state driver's license and "create a national ID card," the provision was first delayed then rescinded by hostile lawmakers.

Illustrating our off-again on-again approach toward better ID is Congress's recent effort (H.R. 4857) to forbid states to use the social security number at all in drivers' licenses or their accompanying databases. The more than twenty states now using the social security number in licensing would be required to cease by 2003.

The irony is inescapable. Those who opposed higher security standards for drivers' licenses by arguing state prerogatives have ended up denying states the right to set their own license security standards. The legislation also proposes other measures to restrict federal, state, and local agencies' use of the social security number. To its credit, Congress did enact legislation (S.2924) in 2000 that bans the Internet sale of false driver's licenses and other ID documents. The law closes a loophole that has allowed Internet purveyors of counterfeit documents to claim that they are sold for "novelty or entertainment purposes only." At this point, upgrading and verifying our de facto national ID, the driver's license, is the most readily available and practical option for promptly developing a uniform, secure ID.

"Will September 11 awaken Congress and the public to the essentiality of immigration controls to national security and tranquility?"

SSA in 1997 fulfilled its 1996 legislative mandate to present the options for making the social security card a counterfeit-resistant, tamperproof, biometric-based national identification document. SSA's 1997 study[4] presented seven plausible options varying in their degree of technological wizardry. The costs SSA estimated for equipping nearly 300 million Americans and residents with the card ranged from $3.9 billion to $7.3 billion. The concept remains just that, a concept. Neither the Bush Administration nor SSA so far have indicated interest in following up on it and Congress, in HR 4857, has seemed more interested in restricting the use of the social security number as an identification tool.

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Birth and Death Certificates and other Vital Records

A reliable national identification system (which would not necessarily involve a card) remains a pipe dream in the absence of more reliable and secure government breeder documents. Here, as elsewhere, recent progress to improve the integrity and uniformity of vital records has been spotty, notwithstanding explicit direction in the 1996 immigration reforms. Section 656 of IIRIRA and various amendments designated INS as the lead agency in a federal-state working group to develop and issue regulations setting security standards birth certificates must meet for acceptance by federal agencies.

The act also tasked the Department of Health and Human Services (HHS) to work with the states, using grants, to develop a system for matching birth and death records and rapid (electronic) reporting of deaths. SSA, no longer in HHS, has made more progress than INS, though both lag far behind the time frame envisaged by legislators. State vital statistics agencies, and their professional association in Washington, with a grant from SSA, are well along on a pilot for electronic reporting of deaths. A pilot for electronic reporting of births is in the planning stage. INS, however, and its collaborating state and federal agencies, are still far from setting federal standards on birth certificates.

Most of the progress toward more secure vital records in the late 1990s is due to the work of the state vital records and motor vehicle agencies and their professional associations, the National Association of Public Health Statistics and Information Systems (NAPHSIS) and the American Association of Motor Vehicle Administrators (AAMVA). NAPHSIS and its member agencies have cooperated with the State Department on systematizing verification of suspect birth certificates of passport applicants. AAMVA has been working since 1994 to establish a model program for uniform identification practices for state agencies to help them to combat fraud. Among their goals: To see each state's MVA linked electronically with SSA, INS, and vital record agencies for rapid exchange of information on individuals and documents. AAMVA shares the general view among professionals in the field that document fraud cannot be effectively curbed until there is electronic verification.

Despite continued difficulty with applying computerized information systems, the INS has made considerable progress in modernizing and securing its own alien ID and data systems. In the past decade, the agency has adopted tamper-resistant Permanent Resident (green) cards and employment authorization cards. Both now have expiration dates. INS and the State Department instituted a combination tourist visa/border crossing card, using laser technology. INS has also invested heavily in forensic research and scrutiny on questionable documents, and more training of government and private sector document inspectors to recognize fraud. INS's and the State Department's emphasis on machine-readability of ID documents improves databases and watch lists with their rapid and accurate capture of high volumes of individual case data.

"Most of the progress toward more secure vital records in the late 1990s is due to the work of the state vital records and motor vehicle agencies, and their professional associations..."

In the past decade INS has installed IDENT, an automated fingerprint identification system (AFIS), to collect data on captured illegal aliens. The system is promising. It was not technical failure but lack of staff training that caused INS's embarrassing failure to recognize and hold fugitive Mexican serial killer Maturino Resendiz in June 1999. An unamused Congress ordered a five-year project to combine IDENT with the FBI's fingerprint identification system.

NATIONAL SECURITY CONSIDERATIONS:

SSA and the states are moving haltingly in the direction of higher standards for breeder documents as envisaged in the 1996 act. Problems are lack of money and staff, privacy objections, local politics,

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revenue issues and, more recently, legislative moves to limit use of the social security number.

- *Public pressure is needed to get greater urgency into these projects and, particularly, to move INS to produce timely rules on tighter federal birth certificate standards.*

- *The attempts of Congress to restrict state use of the SSN for drivers' licenses must be resisted.*

- *More federal incentives and support are needed for the smaller states to match birth and death records and improve the security of those records.*

- *Federal-state agency networks for electronic verification of INS and State Department documents and state-issued documents are a must.*

Employer Sanctions and Employment Verification

Mere survival of the concept of employer sanctions in the face of employers' ravenous demand in the late 1990s for workers has been the only victory for immigration controls in this area. All parties now accept that existing verification systems requiring employers to check a welter of job applicants' ID and work eligibility documents, most of them subject to easy falsification, just does not and cannot work and is burdensome to employers.

"The Attorney General ended the mandatory annual registration of alien residents in the late 1970s. Illegal aliens have surreptitiously settled here by the millions in the last three decades."

Pilot projects of INS in the late 1990s tested a call-in system for verifying the eligibility of citizens and aliens to work in the U.S., a much-delayed step mandated by the Immigration Reform and Control Act (IRCA) a decade and a half ago. Using SSA data, the pilots produced promising indications that massive numbers of illegal aliens in some industries, such as meat packing, could be detected. But their very success heightened employer and congressional opposition and led SSA to put conditions on INS access to its data. There is now a virtual stand-down in immigration enforcement at the work place. And employers, now joined by labor unions, are pressing hard for a complete end to employer sanctions.

NATIONAL SECURITY CONSIDERATIONS:

- *With unemployment rising in 2001 and indications of higher public concern over the unchecked influx of aliens, now is a good time to work for a recommitment to employer sanctions, along with an SSN-based, call-in verification system.*

- *SSA must cease foot-dragging on workplace enforcement and recognize it as an opportunity to clean up its own fraud-plagued databases. Its own surveys have shown a rapid growth in the 1990s of contributions ("wage items") going into the "suspense file" because they cannot be associated with a valid social security number. From 1996 to 1998 6.6 million flawed wage items representing $27.4 billion went into the suspense file. Most involved unassigned numbers (even the legendary 000-00-0000), numbers used by two or more workers, and numbers not valid for employment. (One half of all the erroneous wage items come from just three immigrant-laden industries: agriculture in California and Florida, eating and drinking establishments, and services.*[5])

- *SSA should apply more rigorous penalties against employees who submit false numbers and employers who unquestioningly accept them. A good start would be to enact proposals to have wages reported under false numbers forfeited to the trust fund.*

Tracking Arrivals and Departures of Aliens

Nothing could be more basic for a modern state than knowing who is within its boundaries, particularly those who are not citizens. But the U.S. has rarely been comfortable exercising this faculty. The Attorney General ended the mandatory annual registration of alien residents in the late 1970s. Illegal aliens have surreptitiously settled here by the millions in the last three decades. At least forty percent of the settled illegal alien population of six to eight million

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did not sneak in to the country, but entered originally documented as temporary visitors. Some thirty million foreigners now enter yearly with temporary authorization, but there has been no process for determining if they leave, and in the case of those who come to study or work, no way of knowing whether they are doing what they came to do or where they are doing it.

A visa waiver authority for citizens of twenty-nine countries deemed to be low-risk for overstaying now allows seventeen million persons a year — more than half of all temporary entrants — to come in for up to ninety days without being vetted at all by U.S. consuls abroad. Legislation in 2000 made the waiver program a permanent feature of immigration law. The U.S. requires only that the waiver country give reciprocity and adopt a machine-readable passport. The waiver country's citizens forfeit the right to certain legal remedies to remain in the U.S., and of course must be from a country that at one time had a refusal rate on visa application in U.S. Consular posts of three percent or less. The increasing use of machine-readable passports eases INS's task of capturing a record of entry — though a number of visa waiver countries will not have passports that meet U.S. standards until as late as 2007. But whether or when those using this privilege actually depart the U.S. is largely unknown.

The waiver allows the State Department to save on visa officer positions, but the Justice Department is less enthusiastic about it. The procedure increases the time demands on its inspection staff at U.S. ports of entry. A further, growing problem is that the waiver increases the value of waiver country passports to prospective illegal entrants, criminals, and terrorists. Counterfeiting of visa waiver passports has flourished in frequency and sophistication.[6]

Section 110 of the 1996 IIRIRA aims at documenting the departures of temporary visitors. The provision directed the Attorney General to develop within two years an automated entry and exit control system for collecting a departure record of every alien and match it with an arrival record to identify visa overstayers.

"Five years after the passage of Section 110, immigration officials are authorized to verify departures of only a fraction of visiting aliens."

The plan's subsequent fate is an example of Congress's ambivalence on tracking systems. Following its adoption, and reacting to the anger of U.S. border-area business interests, a coalition of border state legislators led by then Senate immigration subcommittee chairman Spencer Abraham of Michigan worked to delay implementation of the project and, later, change it from an action program to a pilot. Since snarled land border traffic to and from Canada was the dominant concern, INS was allowed to proceed with improving ongoing collection of departure records at air and seaports, where departing aliens are already required to surrender their I-94 entry forms (but often do not). The Clinton administration and INS itself showed little enthusiasm for pressing ahead with the system as originally enacted because of its size and scope and drain on manpower.

Five years after the passage of Section 110, immigration officials are authorized to verify departures of only a fraction of visiting aliens. Congress's latest reenactment of Section 110 (Public Law 106-215) in June, 2000, still showed no urgency in getting a system up and working. The latest law authorizes an "Integrated Entry and Exit Data System" to be in operation by the end of 2003 for the 210 air and seaports of entry, the end of 2004 for fifty of the 190 land ports of entry, and the end of 2005 for all 400 full service ports of entry. Congress insisted that the systems chosen must rely on existing data sources. It is uncertain how the Secretary of State and the Attorney General can develop effective systems at land ports of entry in the face of the law's explicit denial of authority to "...impose any new documentary or data collection requirements on any person."

NATIONAL SECURITY CONSIDERATIONS:

- *Washington would be justified in revisiting Section 110 to advance the effective dates at all*

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categories of ports of entry and permit reasonable additional data collection.

- *The visa refusal rate is an insufficient measure of a nation's suitability for a visa waiver. The visa waiver law provides for emergency revocation of the privilege to any country. This authority should be applied against countries whose passports show more than a minimal propensity to forgery or alteration.*
- *Revocation of the waiver should be mandatory for countries that the new entry-exit verification systems show have more than a negligible overstay rate. Reviews of country overstay rates should be made now using available INS information on sea and air departures.*
- *To aid data collection, the government should consider closing smaller ports of entry and exit and require that all overland entry and departures by non-NAFTA temporary entrants be limited to selected border crossing points.*

Monitoring Foreign Students and Temporary Workers

Steven Emerson, an expert on terrorism, warned Congress in 2000 that at least two hundred terrorists' agents received student visas in the 1990s and have pursued graduate or undergraduate training here. It is now known that some of the terrorist pilots of September 11 received their training at U.S. aviation schools with technical training (M) visas. Emerson noted that terrorists and militants have used university student (F) or cultural exchange (J) visas to enter the U.S. for shorter periods, often with invitations to religion-based conferences and meetings of Islamic organizations. But their true mission is to recruit activists, raise funds, coordinate strategies, indoctrinate U.S. Moslems, and even in some cases train in terrorist tactics. Many are able to get the visas with false identification or by omission from or inadequate checking of U.S. watch lists.[7]

A 1998 report of the federal Commission to Assess the Ballistic Missile Threat to the United States stated that the "acquisition and use of transferred technologies in ballistic missiles and weapons of mass destruction has been facilitated by foreign students training in the U.S." FBI Director Louis Freeh warned Congress in 1996 that "some foreign governments task foreign students specifically to acquire information of a variety of technical subjects... And on completion of their studies are encouraged to seek employment with U.S. firms to steal proprietary information." FBI chief of anti-terrorism Dale Watson in 1998 cited Iran as a country whose government relies heavily on students in the United States for low-level intelligence and technical expertise.[8] Senator Diane Feinstein, who serves on the Senate's subcommittee on terrorism, has noted that between 1991 and 1996 the State Department issued 10,000 student visas to nationals of Iran, Iraq, Syria, Sudan, and Libya, all cited by the State Department as sponsors of terrorism.

"Given the euphoria of opinion leaders about immigration, and resistance from the universities and colleges, the proposal to create a system to track foreign students has lagged badly since its enactment in 1996."

Given the euphoria of opinion leaders about immigration, and resistance from the universities and colleges, the proposal to create a system to track foreign students has lagged badly since its enactment in 1996. The law directed Justice, State, and Education to work together on a system to electronically collect information from educational institutions on the identity, address, academic status, and disciplinary actions of foreign students holding F, J, and M category visas from five countries. This phase was to be completed by January 1, 1998, and was to be financed by fees, paid by the foreign students, now set at $95 a year. A serious sticking point has been the refusal of colleges and universities to collect the fees. The INS will now do it. The full program will begin with the spring semester of 2002 and will apply only to students enrolled since 1999. Originally known by the acronym CIPRIS (Coordinated Interagency Partnership Regulating International Students), the system was renamed SEVIS this year (Student and

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Exchange Visitor Information System).

NATIONAL SECURITY CONSIDERATIONS:

Except for its four-year delay in implementation, SEVIS is an innovative and promising system for monitoring a particularly mercurial group of long-term, overstay-prone foreign visitors and holding the universities who recruit them more accountable for ensuring their compliance with long-neglected student visa law and regulations. It also adheres to the growing conviction in Washington that immigrants, whether visitor or temporary, should pay much more of the cost of the services and oversight they receive.

- *The downside of the program is its refusal to address the sizable numbers of foreign students who enrolled before 1999, many of whom have fallen into irregular status. This limitation should be dropped.*
- *The successful testing and startup of SEVIS provides an opportunity to extend the system, or a similar one, to other temporary worker, student, or researcher categories that impinge on national security or the high tech economy and labor force. Long-term temporary categories that merit similar reporting and tracking, most of which are sponsored or hosted by U.S.-based institutions, would be treaty traders (E), professional and technical workers (H), journalists (I), intracompany transferees (L), and (R) religious workers.*
- *Bring the Departments of Defense and Energy into the interagency group running SEVIS to improve assessments of the transfer of sensitive technology through foreign graduate students.*
- *Suspend issuance of all student visas for one year and reduce the number of schools eligible to enroll foreign students, eliminating immigration and diploma mills and marginal vocational and technical schools.*

General Considerations and Recommendations

The terrorist threat will not wait for languorous interagency studies and pilot projects. Speed is vital. ***Those systems already up and running must be put to full use. Those successfully tested must be installed rapidly****. Resources will inevitably be a major consideration.*

- *The built-in tendency to treat immigration as a marginal security interest must be resisted, as should the temptation to draw on INS resources, such as Border Patrol officers, to more spectacular, but not necessarily more vital, duties.*
- *The INS cannot afford more disruption at this critical point. Plans for massive reorganization of the agency should be held in abeyance. Political leaders particularly should avoid imposing vast new immigration and naturalization benefit programs — such as amnesties, guest worker intakes, and broad humanitarian projects — that would divert the staffs of INS and the State Department from security and enforcement projects.*
- *The most efficient way of monitoring prospective terrorists is to deny them entry in the first place. INS should get the funds and people to open pre-inspection stations at additional major foreign airports and to supplement the work of U.S. officers in posts of high visa demand.* ■

NOTES

1. See testimony of Dale Watson, Chief, International Terrorism Section, FBI, to Senate Judiciary Committee, Subcommittee on Technology, Terrorism, and Government Information, Washington, 24 February 1998; also testimony of Louis B. Freeh to Subcommittee on Commerce, Justice, State, and the Judiciary, Senate Appropriations Committee, Washington, 4 February 1999.

2. "Patterns of Global Terrorism — 2000," Department of State, 30 April 2001.

3. David Simcox, "Screening People Electronically," *The Social Contract*, Vol. IX, No. 2, Winter 1998-99, p. 74.

4. *Report to Congress On Options for Enhancing the Social Security Card,* SSA Publication No. 12-002, Social Security Administration, September 1997.

5. Taken from www.ssa.gov/oig, 31 July 2001.

6. Testimony of Walter D. Cadman, INS Counter-terrorism Coordinator to Senate Judiciary Committee, Subcommittee on Technology, Terrorism and Government Information, Washington, 24 February 1998.

7. Testimony of Steven Emerson, Director of *Terrorism Newswire,* to Senate Judiciary Committee, Subcommittee on Immigration, Washington, 25 January 2000.

8. Ed Timms and Jayne Noble Sulder, "Security worries putting spotlight on student visas," *Dallas Morning News*, 20 September 1998.

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National Maturity?

It would mean an end to promiscuous openness

by Diana Hull

No audible thunder preceded September 11, but we were struck by lightning nevertheless — electrified, horrified, and galvanized into action. Now it's adrenaline time and the country wants answers. These are the questions.

How is it that radical Islamic sects can send their terrorists to the United States where they use false identity documents, over stay visas, receive advanced degrees in weapons technology, train to be pilots, travel about recruiting new members, and raise funds for their cause?

The ease with which these things can happen has been thoroughly documented in two expert reports, one written before the disaster, and one released on October 4.

But the question that gets to the heart of the matter was asked by former State Department official Lindsey Grant several years ago: Why do opponents of effective border control have so much influence?

On January 25, 2000, terrorism expert Steve Emerson warned the House Subcommittee on Immigration and Claims that most Islamic terrorist groups had been operating in the United States for a fairly long time. He said these groups often operate "below the radar screen" under the false veneer of being moderate or mainstream; many pose as non-profit foundations. In California there is a terrorist-related group called "Charity without Borders." Another, "The Holy Land Fund for Relief and Development," raises money in three states.

Mr. Emerson listed 15 reasons why terrorist groups were able to gain a foothold and 12 of those reasons were linked to immigration policy and failures in enforcement. They include the ease of border penetration, the giving of visas to students from terrorist-harboring countries, the failure of universities to keep track of foreign students and their spouses, and the ease with which fraudulent documents of every kind can be obtained.

On October 4, Phillip Martin, an agricultural economist from UC Davis and Susan Martin, the former Executive Director of the U.S. Commission on Immigration Reform, wrote a summary paper on immigration and terrorism. They pointed out that the 19 hijackers who killed thousands of people had been in the United States from one week to seven years. Sixteen had entered with student or tourist visas, some of which had expired. They were part of the 8.5 million foreign nationals who also entered with seemingly valid visas, one half of whom did not abide by the terms of those visas, one of which was to leave the U.S. within ninety days.

> ***"...our government does not track the movements of foreign nationals to see if they are in compliance..."***

So, as you read this, there are over four million people still here who agreed to go home, but did *not*. Nevertheless 7.1 million new visas were issued in FY2000.

This and other evidence shows conclusively that our government does not track the movements of foreign nationals to see if they are in compliance with the terms of their visas; neither do they verify their actual identity. If the names they give are not in a U.S.

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database already, false names and forged documentation cannot be detected.

Another thirty-one million foreigners, who supposedly enter the United States temporarily each year, do so without any visas at all under a "visa waiver" program for twenty-nine countries. Canadians and Mexicans who live in the so-called "border regions" come and go with Border Crossing Cards.

"Protecting our borders will not prevent us from being good neighbors, nor from cooperating with others in dealing with transnational problems like the global environment and the health of the oceans."

Visas are called the "front door" to immigration, but the National Commission on Terrorism, convened in 2000, concluded that despite elaborate immigration laws, we are a country with de facto "open borders." More troubling is that remedies have been persistently blocked by Congress. As far back as 1996 the INS was required to develop an entry-exit system, but the Senate voted three times to repeal it. The reason is the likelihood of slowing both trade and the flow of cheap labor. That is why we have 5,000 border control agents in the U.S. but send 32,000 troops to protect the population of Bosnia.

Martin and Martin conclude that terrorism may require a reversal of the ever-increasing opening of borders. It will be resisted, however, because any investments in U.S. security may act as a tax that slows globalization.

New Yorker writer Hendrick Hertzberg acknowledges that the global market makes an important assumption, i.e., that most people will behave in their own economic self-interest. Yet he shows some awareness of tribal passions and irrational fanaticism when he says of the 9/11 attack that terrorists "rode the flow of the world's aerial circulatory system like a virus."

Thus, in addition to our failure to be vigilant, there was also Bin Laden, that "wild card" of opportunistic malignancy, who seduced the disaffected and imbued them with suicidal resolve. Hitler, too, lusted after the destruction of cities and people. He wanted to destroy Paris (an order that was not carried out by the German Commander in France), level Leningrad and eventually, to demolish all of Germany before the Allied occupation.

On 9/11 we witnessed another lethal nexus between maniacal plans and access to the means of carrying them out. While we need to understand and then correct the ways in which Americans became vulnerable to attack, the determination to change will spring from the strength of our ties to the national family. That means growing up. We need to stop lusting after "bargains." We trust that even U.S.-owned global business now appreciates how expensive that cheap immigrant labor the airlines hired as passenger screeners actually turned out to be. Ninety percent of the employees at Dulles Airport were foreign born and earning minimum wage. Fifteen percent were Pakistanis; others were foreign nationals from Africa and the Middle East who had lived in America less than a year.

Protecting our borders will not prevent us from being good neighbors, nor from cooperating with others in dealing with transnational problems like the global environment and the health of the oceans. But the size and composition of the U.S. population are local and national issues, and ecologist Garrett Hardin advises us wisely that we need to "de-globalize them."

A sustainable future might still be achievable if we move toward a more decentralized world, living side by side in friendly but distinct and self-sufficient societies. We are entering a new time in our national history, advancing from the adolescence of promiscuous openness to the appropriate caution and vigilance that signal our maturity. ■

[*The report to the German Marshall Fund of the United States, "Immigration and Terrorism" by Philip Martin and Susan Martin, can be seen on the website: www.thesocialcontract.com. A hyperlink to the text appears at the very top of the home page.*]

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Why Do the Terrorists Hate Us?

A veteran foreign service officer ventures some answers

by Lindsey Grant

[Editor's Note: Lindsey Grant was asked by a cousin how he would explain the terrible acts of September 11. We appreciate the opportunity to publish the exchange.]

> *Lindsey: I wanted to hear from you...your thoughts on this tragedy in our world. I am struggling for comprehension on why we are so hated by many factions in the Middle East (and beyond). I know it is not as Bush says "evil against good." Such duplicity totally side steps our role in this and when I say "our," I mostly mean the federal government though I am more than willing to look at myself. And I am.*
>
> *I am not feeling "patriotic" though I love my country, my community, my family, friends, and life. I am feeling more the reality of the Global Family...We have to find a way to live peaceably together. As Gandhi says, an eye for an eye and the whole world is blind. Technology is too powerful and we are too interconnected to keep bombing the hell out of each other. There must be other strategies that would work if we could come to grips with the pain so much of the world feels and use the money in a different way instead of inflicting more pain. I honestly don't know if I would kill the small group of men who master-minded this if they were rounded up. Suffering for the rest of their lives on this earth could be more of a punishing hell, especially since they glorify a sacrificial death so much.*

Susan:

Let me begin at the most immediate level and work outward. I think the intensity of the American reaction arose in part because the attack was so huge and in part because in this country few people (except those who have to live in the slums) have been used to living with the proximity of violent death. The senseless attacks on schoolyards, the Oklahoma City bombing, were profoundly disturbing. They seemed to signal some deep dysfunction in our own society. This attack was about our role in the world, a shocking reminder that, although our leaders talk regularly of American leadership, there are people out there who really hate us. I guess this is a real surprise. When Americans travel, they usually come back with memories of friendly strangers. (Of course, the ones they see are frequently profiting from their presence.)

Having spent some years working in embassies abroad, having experienced some violence and having lost several friends and fellow Foreign Service officers to assassination, I have probably been more conscious of the constant proximity of violence than if I had spent those years in the United States. (I know my wife won't forget her introduction to Cyprus. We had just hosted our first formal dinner. It went well, and we settled in for a nice sleep, when somebody set off a bomb underneath a Mercedes a block away. That action wasn't aimed at us, but later of course others were.) Much of the world's population lives with that constant awareness. Welcome to their world. We in the U.S. have not experienced much of that sort of

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direct political violence.

Having said that, I was glad to see the outpouring of patriotism that the attacks stirred up. I don't mean jingoism, but we have to be able to act as a nation rather than as a collection of competing interest groups if we are to deal with present realities and those to come.

You stated the ideal of worldwide brotherly love. That is an ideal. It is not a good description of the way people (and many other animals) behave when they perceive a threat to their interests. We are a contentious species. Even your message ended on a note that can hardly be called one of forgiveness and love. Remember that those terrorists deliberately killed themselves in the hope of killing others. That kind of hatred requires an intense loyalty to a partisan cause. The dream of course is that somehow, eventually, humankind can develop an equitable system that makes such partisanship obsolete. But that is a long time away — and I think it is getting farther away.

"I think we are entitled to be angry, but we should also recognize how our adversaries perceive us."

The principal American reaction has been one of anger at perceived injustice. The minority reaction has been *mea culpa*, a criticism of ourselves for having generated such anger. I think we are entitled to be angry, but we should also recognize how our adversaries perceive us. The United States will almost certainly be the target of the disaffected (who frequently are Muslim fundamentalists), because of our role in the world and because, as a nation with an investment in stability, we tend to support the status quo. There are elements in our past policies that lead them to identify us as a target. I am no Middle East expert, but I can see several such policies:

1. The major and continuing U.S. support of Israel, without which its treatment of the Palestinians and even perhaps its existence would be impossible.

2. The U.S. intervention in Iran against Mossadeq and in behalf of the Shah. Mossadeq seemed to threaten us, because he leaned toward the USSR and posed a threat to our access to oil. In the Cold War we saw these as justification for our behavior. He was, however, the people's choice. For others who did not share our strategic concerns, our intervention was a betrayal of the people and of our own democratic principles.

3. Our hostility to Nasser, a major popular figure in the Arab world, because of Cold War considerations.

4. The international ban on Iraqi oil exports which has caused much suffering among the Iraqi people. We were recognized as leaders of that ban (and our recent efforts to find a humanitarian way to modify it are probably not generally recognized). From our standpoint, we were justified in taking tough action against a leader who tried to develop atomic, chemical, and germ weapons and who invaded a neighbor and tried to take over more of the world's oil reserves. Our opponents are less concerned than we are about such things as free access to oil.

5. Our cynicism in supporting the most illiberal elements in Afghanistan — who later became the Taliban — against the USSR-supported government. (This, obviously, doesn't worry bin Laden, but it must worry the people we want on our side.)

If I had been present at the Creation (in that lovely Spanish phrase), I would have urged different policies in some of these respects, but not in all of them. Until we get the good sense to diversify away from petroleum, we are going to have a major stake in assuring access to it. That is real-politik, but it is real. Moreover, remember that not all Arabs are mad at us. There are plenty of them who welcome our role, including those who hope for peace and quiet and an opportunity to live their lives. After all, the Saudis paid us $30 billion in support of Desert Storm. Moreover, our opponents may offer a less humane alternative than the present situation in many Arab and Middle Eastern countries.

We do not necessarily back away from our policies because some terrorists have proven how much they hate us. That area of the world has been known for decades for its potential instability. It takes finesse to recognize which of our interests are real, and which ones are imagined — to support the more

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genuinely democratic forces such as President Khatami in Iran and not to run either with tottering despots or religious fanatics. What I am suggesting here is that things are not usually as simple as they seem.

As to what we do now: As you can imagine, I am no fan of the President, but I think that he has staked out the right course. (In that, I think Secretary Powell's hand is clearly discernible, and I'm glad that he, not Wolfowitz, is calling the tune.) To start indiscriminate bombing would be to promote more fanaticism and strengthen just the forces that oppose us. We need to protect ourselves against further attack. I think more attacks are likely because the organization is still there and because others will tend to imitate what seem to be successful tactics. (Incidentally, I suspect that the next attacks will not be against aircraft because of tighter security and heightened awareness but against other mass targets — Japanese terrorists attacked the Tokyo subway — or vital communications whose removal would paralyze the economy.)

We will need a lot better intelligence before we can move against these terrorists and others. We need to reassure our friends and allies that we will not be precipitate, so as to get their intelligence assistance and their political support. What we do then depends on what we have learned. In this business, it may not be possible to apply the rules of procedure we demand at home. If we can identify and locate self-professed terrorists, there are different ways of getting them. It may take years. Be patient. Americans tend to want action *now*. We mustn't rush the government's hand. The Air Force bombed Qaddhafi's palace in Libya when we were pretty certain he was in it. We just missed him, but his behavior softened astonishingly after that attack.

Where Do Terrorists Come From?

So much for an outsider's impression of the proximate causes of the September 11 attacks and what we should be doing about them. Let me go now to the driving forces that generate terrorists. This is an area that seems to be universally ignored in the present debate.

When they are not threatened, most people tend to be friendly. Tensions grow and hostilities mount when they are competing for scarce goods and resources. The Middle East is mostly desert, with few natural resources except petroleum and gas. By and large, the populations in 1950 were living at subsistence level, within those constraints. The oil boom and the population boom changed all that. Since then, Saudi Arabia has gone from three to 22 million people, the United Arab Emirates from 70,000 to 2.6 million (most of them foreigners). Jordan, without oil resources, has five million inhabitants now; it had fewer than 500,000 then. Most of the countries in the region have trebled, even Afghanistan, which is in shambles. Israel, at the middle of the powder keg, has gone from 1.3 to six million.

The Jews are sequestering water supplies for their own use at the expense of the Palestinians, but the Palestinian West Bank is the source of the aquifers on which Israel depends. The million-plus Arabs squeezed into the Gaza Strip are doubling every 18 years. With aquifers turning saline, with few jobs and almost no resources, young Arabs there are probably at a stage of anger we can hardly imagine. The supply of water has not increased, so per capita supplies are down accordingly. The oil-rich can desalinate seawater for domestic and commercial use, at a very high price — but not for irrigation, which is still too expensive. Others do not have that luxury.

"As competition for water intensifies, so do the international tensions."

As competition for water intensifies, so do the international tensions. Water is a major issue in Israel's relations with Syria and Jordan. Elsewhere, the Turks have been putting dams on the Tigris and the Euphrates, threatening Iraq's irrigation systems. It is a one-product region, and petroleum profits are very unevenly distributed between and within countries. The Saudis (and Gulf states) in effect made a bargain with their people, providing everything for them in return for their acquiescence in the Saudi family's taking the oil profits. That unspoken deal is coming unraveled as the growth of population and the greed of the family make it harder to keep their side of the

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bargain. It is hard enough to be poor. It is intolerable to be poor and see immense wealth around and above you. And it is most intolerable of all if you do not have a job, or anything to do but listen to the bin Ladens of the world.

The Arab world is the slowest of all regions, except for Africa, in coming to see the need for family planning. That means that the poverty, the inequities, and the shortage of water are going to become even more galling. Most nations in the Third World would welcome more help from us in bringing human fertility under control, but generally not in the Middle East. They are locked into their antagonisms, and family planning is a victim of competitive breeding.

It is, in short, a scene pregnant with possibilities for extremist demagogues. T. E. Lawrence long ago remarked on the Arabs' propensity for following a man with a message. Let us hope they do not follow the wrong one. I assume that even an anti-Western (anti-American) fanatic would want to sell oil to us, because his followers would need food and necessities.

The more immediate danger for the Western world and Japan is that turmoil would interrupt the oil supplies on which we depend. During Desert Storm the Iraqi Army managed to torch the oil wells in its path even when it was in full retreat. And our dependence increases year by year. Japan, with almost no indigenous energy sources, is the most immediately vulnerable, but all of us would face a time of turmoil.

Terrorism is the weapon of the weak. The example having been provided, we must assume that there are enough deeply embittered people in the Middle East to seize upon it, even though in the long term it is unlikely to do them any good. From this description, you would hardly take me for an optimist. I am one, for the long term, largely as a matter of faith. In the immediate future, however, it seems to me unlikely that we will escape unscathed from the forces that have been set in motion, partly by population growth, in the past 50 years.

And not just in the Middle East, though that is a particularly vulnerable area. I suspect that we in the United States will, at best, have to learn to live within a much less easy-going system than we have had, and that constraints on our individual freedom will become more commonplace as we seek to counter terrorism. There may be one useful by-product from that sacrifice: If we have to learn to identify terrorists, we will need to identify other people, too, and that would provide a needed tool in our efforts to enforce the laws and bring illegal immigration (and population growth) under control.

You probably hoped for a more upbeat answer. I am sorry. Let me try to end with one positive thought. We should be learning that interdependence can be a danger when we rely on unstable regions for basic needs. We have the option of anticipating the inevitable phase-down of the petroleum era and shifting systematically to other sources. The transition will involve fundamental readjustments. Railroads, for instance, can run on electricity, but airplanes cannot. The shift of energy sources will involve dangers, insofar as we go nuclear. It will require heavy clean-up costs, if we rely on coal. It does offer a chance to move toward more benign technologies such as wind and photovoltaics. Wind energy is competitive for peaking power, right now, if we consider the environmental costs of fossil fuels. Europe is beginning to make the move. So should we.

And, of course, we wouldn't need so much energy if we weren't so damn big.

September 24, 2001

POPULATION LEADERS

The 21st century will see some major changes in world population. Here are the top countries now and projections for 2025:

	Population mid-2001 (in thousands)		Population 2025 (in thousands)	
1.	China	1,273,278	China	1,431,000
2.	India	1,032,989	India	1,363,000
3.	U.S.	284,523	U.S.	345,987
4.	Indonesia	206,086	Indonesia	271,965
5.	Brazil	171,766	Pakistan	251,862
6.	Pakistan	145,049	Brazil	218,980
7.	Russia	144,413	Nigeria	204,453
8.	Bangladesh	133,504	Bangladesh	180,519
9.	Japan	127,130	Russia	136,948
10.	Nigeria	126,636	Mexico	130,852
11.	Mexico	99,608	Japan	120,913
12.	Germany	82,200	Ethiopia	117,600
13.	Vietnam	78,700	Philippines	107,752
14.	Philippines	77,198	Congo, D.R.	105,965
15.	Egypt	69,812	Vietnam	104,124

Source: Population Reference Bureau

The Washington Times

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Overabundance of Rogue Males

A major contributing factor in terrorism

by Don Collins

After the terrible events of September 11, we are all pondering what would seem to be wise counter measures. Recently, a family planning colleague sent me a 1997 research paper which offers startling new research about the conditions where dangerous human rogue behavior is likely to happen. Population growth from two billion in 1930 to six billion today certainly changed not only the numbers, but also the demographic age distribution. Thus, now more than ever before, there are more young people of reproductive age in many developing countries. In these often unstable nations, where eighty percent of recent growth has occurred, half the total population is under 20 years of age — frequently more young errant males than these fragile societies can absorb. This 1997 research paper, entitled "Population Age Composition and Male Coalitional Aggression" by two research psychologists at York University in Toronto, Christian G. Mesquida and Neil I. Wiener, offers a compelling new dimension, enhancing the long-standing policy goal of stabilizing world population.

In this 1997 study, when the ratio of young men ages 15 to 29 in the total population of males (not those under 15) rises to a high level, say, 70 or 80 young males for every 100 males older than 30, there are simply too many young men seeking mates, jobs, and recognition creating conditions for great unrest and instability, particularly in the often weak and corrupt governments found in so many parts of the world. The authors show how historically this has created conditions where shaky governments have great difficulty governing. Circumstances for example were such in Germany in the late 1920s which allowed manipulation of such disaffected youths for Hitler's mad purposes. Since then, the authors cite four additional, though far lesser, examples of such behavior in Paraguay, Venezuela, Southern Sudan, and Brazil. There are likely many unstudied examples elsewhere.

The predictive potential of such investigations is seen from this 1997 study in which the authors note that, based on changing male age demographics, Northern Ireland would become more peaceful, a phenomenon which seems to be slowly emerging. Also that Cuba, for the same reason, would likely lose its combativeness. They noted, "Almost no attention is paid to the fact that all violent group confrontations are perpetrated almost exclusively by young males." Continuing, they summarized that "coalitional" (e.g. purposeful joining for destabilizing actions against society) aggression is likely to be partially due to the relative abundance of males aged 15 to 29, the age group most often implicated in warfare.

Women, the authors observe, are seldom involved in such violent coalitions, as they are more involved in child raising and seek, as their primary criteria for choosing mates, those who can best provide for a family, something disaffected rogue males frequently have neither the education nor opportunity to achieve. Clearly, there is rogue male abundance in many developing nations. The relevance of this research today is obvious.

Now, fast forward to 2001. I have contacted research psychologist, Christian G. Mesquida, the co-author of the 1997 study, who was able to update his percentages on key Middle Eastern countries as to

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***Don Collins**, a board member of the Federation for American Immigration Reform (FAIR), is a free lance writer living in Washington, DC, who has often written on family planning and immigration topics. The chart is from* The Clash of Civilizations *by Samuel Huntington, p.118, used by permission.*

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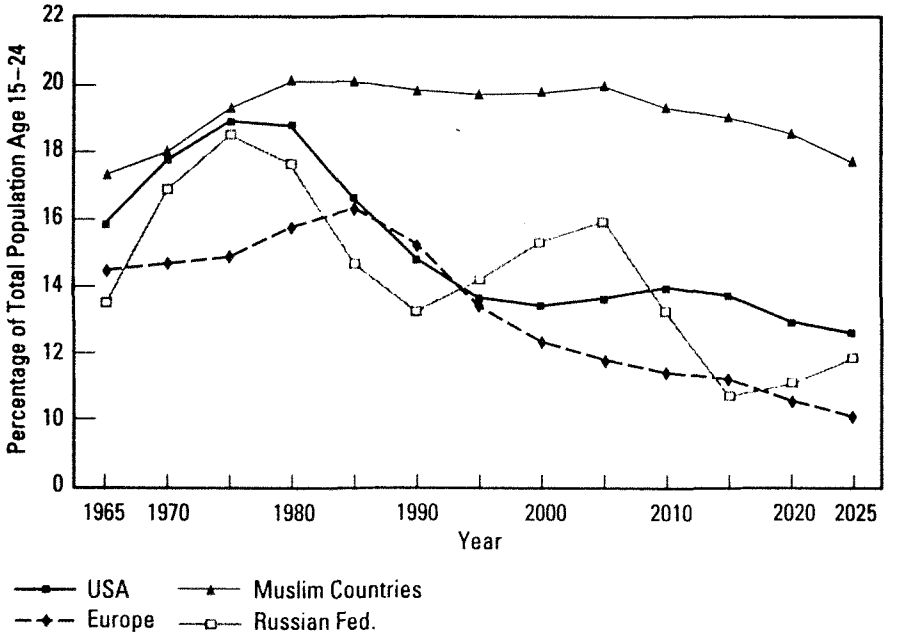

Source: United Nations, Population Division, Department for Economic and Social Information and Policy Analysis, World Population Prospects, *The 1994 Revision* (New York: United Nations, 1995); United Nations, Population Division, Department for Economic and Social Information and Policy Analysis, *Sex and Age Distribution of the World Populations, The 1994 Revision* (New York: United Nations, 1994);

their ratios of young males to males over 30. Here are his findings:

> *I have just calculated the male age composition of some countries in 2001; here are the results: Iraq: there are 110 young males for every 100 males over 30, or 55 percent of the adult male population is between 15 and 29 year of age; Syria: there are 106 young males for every 100 males over 30, or 53 percent; Afghanistan: there are 90 young males for every 100 males over 30, or 48 percent; Iran: there are 90 young males for every 100 males over 30, or 48 percent; and the same for Algeria (48 percent).*

The author made clear in a 9/21/01 phone interview with me that the 50 percent figure in these volatile Middle Eastern states is strongly predictive of +the potential for rogue male aggression. Many African nations such as Nigeria are similar, but they have the AIDS crisis.

Saudi Arabia, which contains 55 young males for every 100 older males (36%), is actually not far from the US, which has 40 young males for every 100 older males (32%) because, the author notes, "There has been substantial immigration into the U.S." Dr. Mesquida's research reflects a history that shows when the number of young males reaches 70 to 80 for every 100 males over 30, the aggression phenomenon becomes manifest. He compares these dangerous ratios noted above to peaceful countries: Sweden (25%) and Canada (28%). The Middle Eastern nations noted above are clearly dangerous hot spots!

And this of course brings us relentlessly full circle to the main point of supporting the stabilization of world population ASAP. National security experts since the 1960s have made this point, but since the early 1970s have been largely ignored. A 1974 National Security Study Memorandum 200 (NSSM 200) urged that world population must be stabilized by providing family planning, along with other basic health services to needy populations. NSSM 200 predicted terrorism but was shelved.

In the past it has been easier to make headlines by firing useless cruise missiles at mud huts as ordered by President Clinton in 1998 when his relationship with Monica Lewinsky was being debated. But no longer. And we urgently must ask ourselves, "Why did these young men seemingly gladly die on September 11 for a cause as abstract as hating America?" Obvious, isn't it? Barely existing in grinding poverty, lacking basic daily needs, getting a diet of propaganda for education with little hope of forming a family, these youths find most attractive the offers of comradeship and glory from manipulators who over time take on a God-like stature. Remember, there are many potential Bin Laden followers out there. Our emphasis better be placed on peaceful, long-term solutions such as health, economic development, and family planning rather than cruise missiles. ■

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How Did the Terrorists Get In?

by Mark Krikorian and Steve Camarota

As we consider our response to September 11's horrific attacks, we must be careful not to seek scapegoats among foreigners who live among us. But if immigrants in general aren't the problem, a broken immigration system almost certainly is partly to blame.

While much attention has been focused on the failure of intelligence and airport security, it is also clear that we have failed to properly police our borders — borders being any place where foreign citizens enter the United States. It would be a grave error if we did not ask ourselves the fundamental question: How did these terrorists get in?

Despite all the cant about globalization, borders are not irrelevant in today's world, nor are they unenforceable. In fact, the need to secure them is more pressing than ever, given ease of travel coupled with very real terrorist threats.

Most Americans understand that our border is not an obstacle to be overcome by travelers and businesses but instead is a critical tool for protecting America's national interests. Unfortunately, much of America's elite doesn't get it.

Most notorious among the cheerleaders for open borders have been libertarians such as the Cato Institute. *The Wall Street Journal* has frequently called for a five-word amendment to the Constitution: "There shall be open borders."

Even minimal efforts to strengthen border controls have often been stymied. Congress in 1996 directed the Immigration and Naturalization Service to record arrivals and departures of foreigners at border crossings so as to identify people overstaying visas. Business interests prompted Congress to postpone this requirement several times and ultimately to eliminate it. If we take the physical safety of our people seriously, we cannot continue to allow libertarian ideologues, immigration lawyers, cheap-labor business interests, and ethnic pressure groups to hobble our ability to manage our borders. What, then, is to be done?

- The Border Patrol, despite recent increases, remains almost laughably inadequate — at any given time, there are only about 1,700 agents patrolling the southern border, an average of less than one agent per mile, and the northern border is even less defended.
- Establishing a computerized system to track entries and exits from the United States should not even be a subject of debate. There are no technological obstacles, merely a lack of will and funding. What's more, the practice of requiring permanent residents who are not yet citizens to annually register their whereabouts with the government, which was discontinued in the 1970s, should be revived.
- The State Department's visa officers overseas need to be recognized as "America's other border patrol." Visa officers often have only two or three minutes to consider an application, and are pressured to approve a high proportion of applicants to avoid offending the host country. The granting of visas should become a free-standing, well-funded function that people sign up for from the start, rather than today's dreaded rite of passage for rookie Foreign Service officers.
- The very morning of the September 11 attack, the House was about to resurrect a provision

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called 245(i), which allows illegal aliens to receive green cards from within the United States, rather than in their home countries. Because personnel abroad are best equipped to screen applicants, 245(i) negates any efforts to keep out those judged to be ineligible.

• Finally, whatever one thinks about the level of immigration, a temporary reduction in legal immigration as well as in the admission of temporary workers and students is essential to allow the overhaul of our immigration infrastructure. Only by lightening the INS' load can the agency both process its huge backlog and strengthen border controls.

Improved border and visa control may not catch all malefactors, but it would help alert us to conspiracies such as the September 11 attacks. If only a few of the dozens of conspirators had been identified by consular officers during visa processing or by border inspectors, it is very possible that the entire conspiracy would have unraveled.

We have, of course, seen home-grown terrorists as well, but that is no reason to neglect border control. We should not overreact by eviscerating constitutional rights, including those of Muslim Americans, but an overhaul of our lax border controls is precisely the kind of reasonable reform that would make future attacks less likely and does not represent any threat to the civil liberties of American citizens. Americans are going to have to wait in longer lines at airports — it is not too much to ask people entering the country to do the same. Moreover, more foreign citizens may be denied visas. The measure of a successful immigration system is not how many people are allowed to enter or how fast, but rather whether the broad national interests of the United States are being served, including the safety of Americans. ■

Do We Want *That* with Fries?

Book Review by Joe Guzzardi

Eric Schlosser's *Fast Food Nation* is many different stories in one outstanding book. On one level it is the history of an industry that transformed the way America eats. From a few hot dog stands scattered across the country into major corporations that sell billions of dollars of hamburgers and fries, fast food has made home cooking passé.

Fast Food Nation: The Dark Side of the American Meal
by Eric Schlosser
New York: Houghton-Mifflin
288 pages, $25.00

Schlosser paints a vivid picture of how McDonald's has dominated not only the fast food industry but has also ventured into other corporate fields. McDonald's is the biggest buyer of beef, pork, and potatoes. The company is the largest owner of retail space in the world, the biggest private operator of playgrounds, and one of the country's major toy distributors. "The fast-food industry now stands alone atop a massive food-industrial complex which has gained control of American agriculture," writes Schlosser.

One of every eight workers in America has at some time worked for McDonald's, and the nation's 3.5 million fast-food workers are the largest group of minimum wage earners.

Ninety-six percent of American school children can identify Ronald McDonald — a higher percentage than recognize Santa Claus. Schlosser forces the reader to stop and consider how McDonald's has used its influence to make its hamburgers part of our

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everyday life.

On a second level the book's main focus is what a thoroughly bad product fast food is. Schlosser develops the theme of just how unhealthy those burgers are. While it comes as no surprise that fast food is not good for anyone, some new facts emerge. As an example: fast food restaurants rely heavily on the contributions of the billion-dollar flavor industry which manufactures and sells the complex chemicals that give distinctive flavors to processed foods such as "smoky" chicken, "strawberry" shakes, and even "flame-broiled" burgers.

The book shines when Schlosser ties the declining quality of fast food to the heavy reliance of the industry on illegal immigrants to work in the slaughterhouses.

Back in the early 1980s, in their never-ending quest to reduce costs, the meatpackers busted the unions and set out to hire unskilled, underpaid laborers. According to Schlosser, at least one meatpacker operates a labor office in Mexico City and a bus line from Mexico to the American mid-west.

Roy Beck, in his book *The Case Against Immigration,* wrote about the unscrupulous meatpackers' practices of undermining the unions. Schlosser confirms every detail revealed by Beck.

Beck wrote, and Schlosser reinforces, that Americans once held jobs in slaughterhouses, performed their tasks with skill and pride, and were paid fairly. Their work was performed in accordance with the strictest safety conditions.

All that is now gone. Working on the kill floor is reported to be "a job Americans won't do." And, of course, under the current circumstances no American would want to do the job. For an illegal alien, however, the job is a ticket to life in America.

In a post-publication interview with *The Atlantic Monthly,* Schlosser predicted what he described as a developing migrant "industrial work force." He said:

> *Until the late 1970s, meatpacking was one of the highest paid industrial jobs in the United States. And then the Reagan and Bush administrations stood aside and allowed the meatpacking industry to bust unions, to hire strikebreakers and scabs, to not only hire illegal immigrants for these jobs but to transport them here from Mexico in company buses. Now meatpacking is one of the nation's lowest paying industrial jobs as well as one of the most dangerous. I'm sure other companies, in other industries, are contemplating the same tactics. And it just can't be allowed.*

In his epilogue, Schlosser calls for meatpacking companies to be held accountable for the products they sell and for the federal government to be given the power to recall tainted meat and to impose stiff fines for violations of that policy.

Schlosser would like to see worker safety improved. He recommends slowing down the production line from between 350-400 cattle an hour to 100-115, the levels that are current in Western Europe and Australia.

In the end, however, Schlosser is not optimistic about any legislation proposing wholesale reforms ever being introduced. The meatpacking and restaurant industries simply have too much clout in Congress to expect any changes. ■

Immigration and the Meatpacking Industry

The importation of hundreds of thousands of foreign workers each year is worse than unnecessary: It ruins good occupations; it rewards callous business management; it penalizes businesses with a strong sense of corporate citizenship; and it creates sweeping changes for communities that never request them and seldom approve of them. At the most basic level, it changes the lives, the aspirations, and the very identity of many individual Americans.

Perhaps no industry reveals that sad spectacle any more dramatically than the meatpacking industry of the last three decades.

* * * * *

Congress in 1965 inadvertently came to the rescue of the union-busting, wage-lowering strategy of the new meatpackers. The 1965 immigration law had a major impact in the direction of the meat-processing industry by creating surplus labor pools with spiraling family chain migration and massive refugee resettlement operations.

— Roy Beck
The Case Against Immigration
W. W. Norton & Company, 1996

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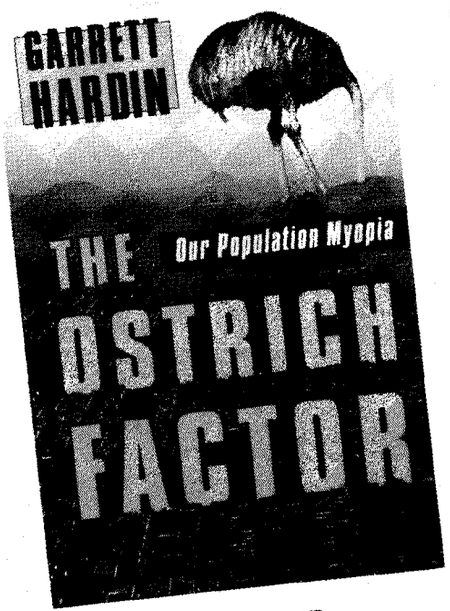

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